THE IRON AGE

A Review of the Hardware, Iron [illegible] Metal Trades.

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The H. W. Caldwell & Son Company's New Foundry.

To facilitate the procuring of castings and to overcome difficulties experienced in obtaining parts to conform with the specifications required in its line of manufacture, the H. W. Caldwell & Son Company, Chicago, has added a foundry to its large plant on Western avenue between Seventeenth and Eighteenth streets. The extension of the company's trade by the acquisition of the entire line of gear and power transmission patterns and the gear molding and gear cutting machinery of the Walker Company, Cleveland, Ohio, and the specialty which it makes of large patterns, band and fly wheels and sheaves have greatly increased its casting requirements. An interior view in the new foundry is shown in Fig. 1.

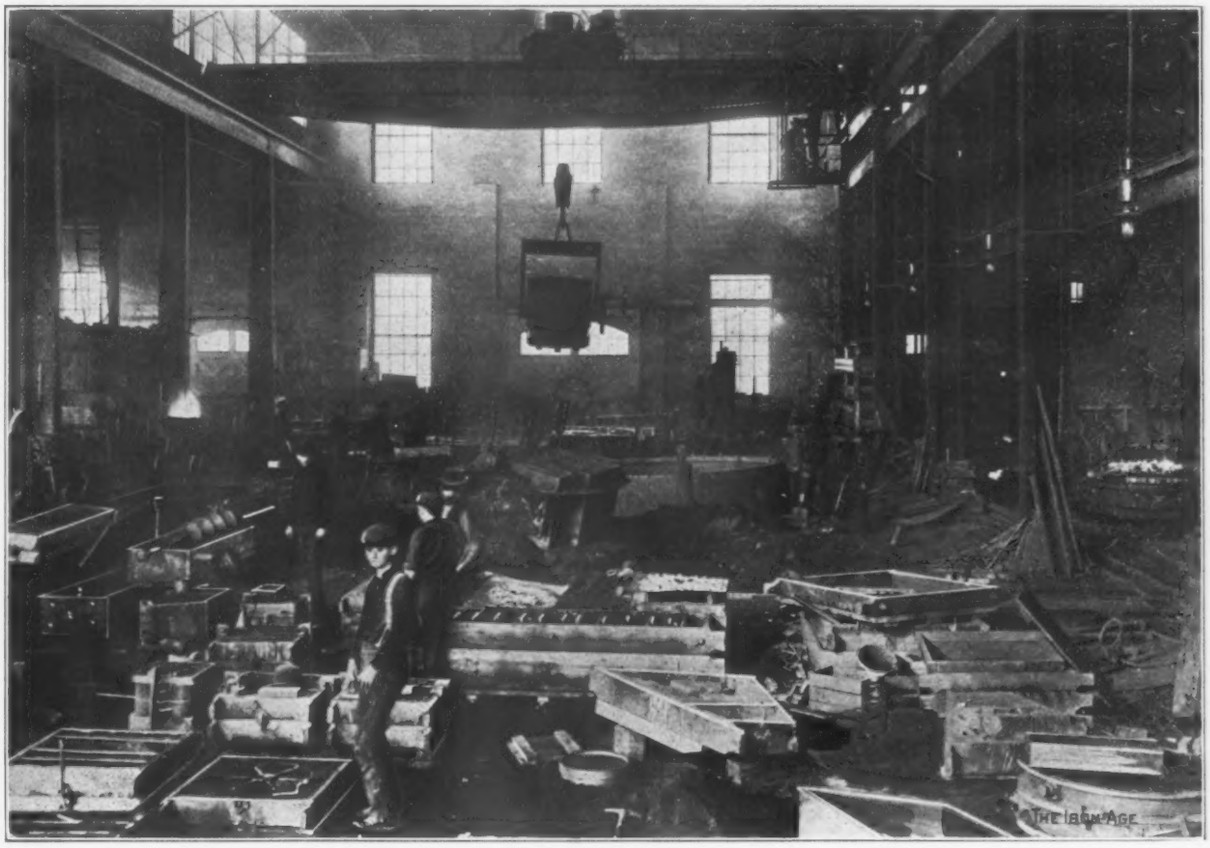


Fig. 1.—A View in the Central Bay of the New Foundry of the H. W. Caldwell & Son Company, Chicago.

The designing of the foundry was complicated by the scarcity of room, and this new department was laid out with a view to securing both ample and economical operations within limited space. Besides the foundry the company's plant includes a machine shop and rolling mill, and expansion on one side was cut off by the machine shop and on the other by the main line of an adjoining railroad. The foundry, shown in plan in Fig. 2, is 114 feet wide and 185 feet long. The central bay is 50 feet wide and there are two wings respectively 34 and 30 feet wide. On account of the lack of space on the main floor it was necessary to locate the bench molding department in a gallery which runs the length of the east bay and is about 30 feet wide. The molds are poured on this floor from metal conveyed from the cupola in the west bay and elevated in ladle cars on a 3000-pound Reddy elevator located in the northwest corner of the east bay.

All of the large floor molding is done in the central bay, where a large wheel pit is located, 46½ feet in diameter, shown in Fig. 1. When not in use this pit is filled with sand to a point 2 or 3 feet from the top and can be used in making miscellaneous molds. The large gear molding machines, one of which is shown in Fig. 3, are also in this bay and are served by one 20-ton Pawling & Harnischfeger electric traveling crane, having a 5-ton auxiliary and capable of an overload of 50 per cent., thus practically making the crane one of 30 tons capacity. The crane runway is 48 feet wide from center to center, the girders being designed to sustain two 20-ton traveling cranes. A works railway system, 24-inch gauge, facilitates the distribution of material throughout the foundry and extends from the wheel pit through the central span to the standard gauge tracks on the other side of the building. The molding floors in the bay opposite the cupola are supplied with metal in ladles transported on cars in the same way that the bench molding floor in the gallery is supplied.

The provision that has been made on the level of the charging floor for storing material is another interesting arrangement occasioned by the necessity of economizing space. The roof of the west bay is used for this purpose and is constructed of reinforced concrete with a load limit of 600 pounds per square foot and a factor safety of four. The charging floor occupies an 80-foot length of this space and is in turn covered by another roof. The remaining portion of the main roof, 60 feet long, is used for storage purposes and has a capacity of 900 tons. A narrow gauge track system serves both the storage and charging floors. Material or stock, including pig iron, coke and scrap, is raised from the ground floor on a Reddy elevator of 6000 pounds capacity and 65 feet per minute speed. Material is loaded on this elevator directly from the cars in which it is shipped, thus reducing the handling to one operation.

The main floor of the west bay contains the coreroom, core ovens and cupola. Space has been left for three cupolas, but only one has been installed. This has a 72-inch shell and is of the Whiting type. It is the intention to add another of the same size and a smaller one with a shell 48 inches in diameter. A No. 6 down-draft Root blower direct connected to a 50 horse-power Bullock motor provides the blast. This motor is governed by a Cutler-Hammer controller, so that air pressure from 9 to 16 ounces can be obtained at will. The blower is located on a platform about 8 feet above the main floor, directly behind the cupola. The blast pipe is so arranged that connections can readily be made to the 48-inch cupola when it is installed. The core ovens are of the down-draft type, the chamber in the flue near the top of the ovens being used only to start the fires. The fire passes up through a checkered fire brick arch, the heat rising to the top of the oven and descending to the bottom, where it is drawn out by underground flues of 18-inch tiling.

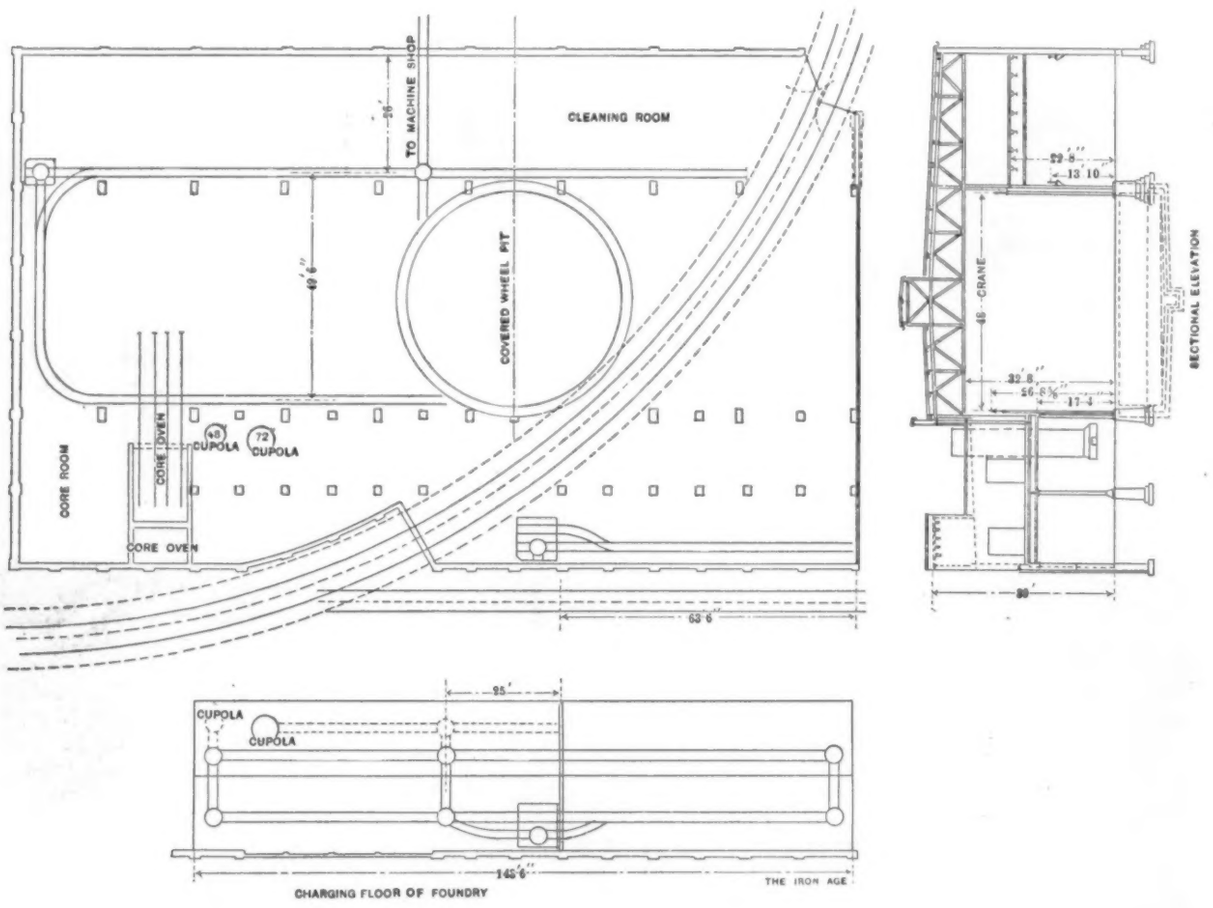


Fig. 2.—Plan of the Main Floor, End Elevation and Gallery Plan of the New Foundry.

A section of the east bay is utilized by the machine molding and cleaning departments. A 5-ton electric traveling crane extending the width of this bay serves these departments. The cleaning department is equipped with pneumatic tools, grinders and sand blast machinery. Power for operating some of this equipment, as well as the wood working tools in the flask department at the south end of the gallery floor above, is provided by two 10 horse-power motors.

The gallery in the east bay, which is used exclusively for bench molding, has a floor of heavy concrete construction and a narrow gauge track runs its entire length. This is principally used to carry the metal in ladle cars elevated from the main floor. A view in this gallery is given in Fig. 4.

Special attention has been given to the heating, sanitary and lighting arrangements of the plant. The building is heated and ventilated by a blower system installed by the Buffalo Forge Company. The fan and steam coils are located on an elevated platform in the east gallery, and the galvanized iron ducts extend through the gallery floor and connect with branches located at each panel point, conveying heated air to the middle and east bays. Arc lights located at the center of each panel and along the columns of the central span furnish artificial illumination, while the numerous windows provide ample light by day. A half story has been built in the north end of the east bay, where modern wash and toilet rooms are located. The foundry office and pattern loft room are located directly underneath, and all the patterns required for the day's work are brought directly from this storage room and placed on the racks in the foundry, where they can be readily secured. Hydrants, bell traps and cesspools are located every 40 feet along the sides of the central span, the cesspools being drained into sewers connected with the sewerage system of the city. Hose bibs at various points furnish a convenient means of tempering the molding sand.

The power required by the foundry and the other departments of the plan is furnished by one 100-kw. belted generator and two direct connected generators of 100 and 50 kw. each, respectively. Direct current is furnished at 220 volts. A spur from the main line of the Chicago Junction Railway passes directly through the foundry to the south end of the machine shop, as shown in Fig. 1. Raw material is brought in on this track, and it is also used for conveying heavy castings to the machine shop, these being loaded on the cars by means of the traveling cranes. Traveling cranes in the machine shop unload them and transport the castings to the machines where they are to be finished. Antifriction trucks operating on the narrow gauge tracks transfer the smaller castings directly to the machine shop.

The company manufactures elevating and conveying, elevating and power transmitting machinery, machine molded gears, double disk friction clutches, and the Caldwell helicoid conveyor. The foundry was designed by

W. L. Stebbings, mechanical engineer, 1110 Monadnock Block, Chicago, who also designed the machine shop, rolling mill and power house.

What is described as the largest steel ingot ever made was cast recently at the Manchester Works, Openshaw, of Sir W. G. Armstrong, Whitworth & Co., Limited. It weighed 120 tons. After the pouring the ingot mold, which itself weighed 180 tons, was pushed under a press having a hydraulic ram six feet in diameter, with a hydraulic working pressure of three tons per square inch. The ingot while in a molten condition was subjected to this pressure of 12,000 tons, the action of the process (the Whitworth system of fluid pressure) being to make the ingot homogeneous and sound throughout and free from cracks and fissures. The ingot just cast is for the manufacture of the low pressure turbine rotors for the 70,000 horse-power Cunard turbine liners.

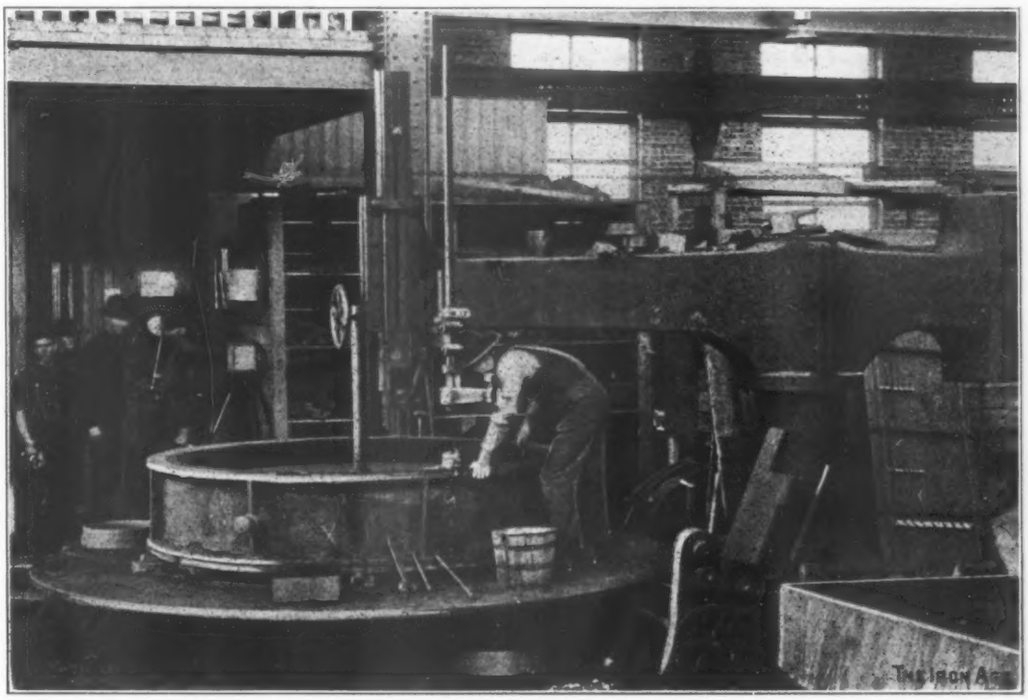


Fig. 3.—One of the Large Gear Molding Machines.

Fig. 4.—View in the Gallery, Showing the Bench Molding Department.

The Selection of Material for Hydraulic Machinery.*

BY ARTHUR FALKENAU, PHILADELPHIA.

In designing hydraulic machinery the determining factors in the selection of material are: 1, the function of the machine or appliance; 2, the space available for placing the apparatus; 3, the hydraulic pressure involved; 4, the velocity of the flow of water or other liquid; 5, in the case of pumping machinery, the kind of fluid to be pumped. Possibly I should have mentioned the last consideration first, but in speaking of hydraulic machinery I had in mind mainly hydraulic presses working under the higher pressures. As to the functions of hydraulic machines or appliances they can be divided into four great classes: 1, presses and intensifiers; 2, pipes; 3, valves; 4, pumps.

Of course the first consideration in designing a press is the total pressure to be exerted, and the second is what hydraulic pressure is to be used or is available. This is at times governed by the space available for the machine, and I have known of instances where in order not to have too cumbersome a machine and the space being limited, it became necessary to use a factor of safety of 3 or 4 referring to the ultimate strength of the materials of construction. Of course in every construction the expense is to be considered, and this frequently determines the choice of cast iron or steel castings for hydraulic cylinders. At times extreme high pressures indicate the desirability of using steel forgings for cylinders. If the cylinder is to receive a plunger which can be packed externally, cast iron or steel castings prove very satisfactory, but where a piston is to operate in the cylinder, on account of the wear of the leather packing a forged cylinder, bored and ground, gives the best results. With castings a copper lining is frequently resorted to in order to present a smooth surface to the leather.

Necessity of Dense Castings.

A most important consideration is the density of the material, entirely aside from the tensile strength. Water under 3000 or 4000 pounds pressure will ooze through cylinder walls made of ordinary gray iron 3 to 4 inches thick—that is, if it is open grained iron. For these high pressures it is usual to use air furnace iron, which, besides giving a tensile strength of 30,000 to 32,000 pounds, furnishes a very dense material, and now that steel castings are so much more reliable than formerly steel castings are supplanting the air furnace iron.

In this connection I would say that in my experience, however, I have known air furnace iron to fail where a good ordinary casting was successful. This was largely due to the manner of casting and to local shrinkages from gates and risers. The failure of cylinders or valve body castings to be thoroughly impervious to the water is frequently the cause of great annoyance and expense in the construction of hydraulic machinery. I have had cases where on account of the anxiety of the customer to obtain the machine we have had to pass cylinder or valve bodies which when first tested failed to hold the pressure, the water oozing through the walls quite rapidly. We remedied the defect by pumping starchy fluid prepared from potatoes into the cylinders, and after a half hour's to an hour's work the cylinders were water tight. These cylinders were put to work under water pressure of 1500 pounds and they have remained permanently tight. I designedly use the words "water tight," as a later experience proved to me that the starch caulking method is not oil tight. In building some 200 ton pressure with 10-inch cylinders we used cupola iron castings. As they proved defective we next ordered some of the air furnace iron. After trying three of these, all of which provel defective, in order to meet the importunities of our customers we concluded to try the starch caulking method. Within a half hour the cylinders were perfectly tight, and after having a hydraulic pressure of 400 pounds per square inch applied to them, and locking this pressure in the cylinder, a drop of only 10 pounds was recorded after 12 hours. We thought that our annoying problem was solved and expedited the machine to the customer's work. The next morning we were informed that the cylinder was leaking badly, and on inspection found that our customer was using oil and that the oil oozed through the cylinder at an apparently greater rate than the water had done originally. I suppose that the oil must have had some dissolving effect upon the starch. As we had had such unsatisfactory results with the air furnace iron I concluded that the only rapid solution of our trouble would be some other way of sealing up the pores of the cylinder. As the leak indicated, the porosity was mostly at the bottom of the cylinder. We therefore had the inside of the cylinder toward the bottom brazed by the ferrofix process. This proved entirely successful and the cylinder has remained sound ever since. I understand that in the case of steel cylinders the sealing by means of the thermit process has been successfully used.

It may be interesting to note here that in the year 1849 the first cylinders used in the hydraulic presses constructed for raising the tubes of the Brittania bridge into position proved porous and leaky and were made tight by pumping oatmeal gruel and sal ammoniac into them. These cast iron cylinders were 20 inches in diameter and had walls 8¾ inches thick. When they failed they were replaced by cylinders made of wrought iron with 8-inch walls. When the wrought iron cylinders were first put to work the engineers were discouraged because the cylinders expanded under the great pressure, causing the pistons to leak. New pistons were made, but the expansion continued. The outer diameter, however, remained constant, and this encouraged the engineers to persist in making new pistons until the inner portion of the cylinders had taken a permanent set.

Cutting Action from High Pressures.

In valves and pumps where water under high pressure attains a high velocity it has been a general experience that cast iron and steel are frequently subjected to a peculiar cutting action. According to my own observation this cutting action has been decidedly more rapid and marked when two dissimilar metals were in contact. Thus in the Loss valves which we built we originally used steel valves and bronze bodies. In several instances after a year or two we found the steel valve apparently eaten out as if by an acid. In one particular instance, believing that acid or grit in the water was the cause of the trouble, a water filter was put in place and only pure filtered water was used throughout the system. The new steel valves were soon eaten as badly as the former ones. It may be that some tannic acid washing out of the leather packing had something to do with this action, or the action may be of an electric nature. We replaced the steel valves by bronze, so that two like metals were in contact, and no further trouble was experienced. I have examined samples exhibiting this peculiar pitting action which, as the location showed, could not have been caused by the impact of the water, due to high velocity in passing out of the valve. Still, the fact that this action occurs near the point of efflux, and not so much elsewhere, might lead one to discredit the electric couple theory. This peculiar action, I believe, has been observed by a great many engineers, but does not seem to have been satisfactorily explained. For small structures under high hydraulic pressures, say from 3000 to 8000 pounds, forgings are far more satisfactory than castings, and I have found bronze under these high pressures unsatisfactory solely owing to the low or uncertain elastic limit of the same. The castings seem to expand gradually and get leaky, although figured with the factor of safety of 6 to 10, based on the ultimate strength.

Packing Material.

The material to be used for packing is also an important consideration. Where U or cup leathers are used a close grained flexible leather is desirable. Of course such leathers should not be taken except from the middle of the back of the animal. Leather treated with paraffin has given good results. There is no doubt that the method of preparation of the leather is an important

* A paper read before the Mechanical and Engineering Section of Franklin Institute, Philadelphia.

factor in its imperviousness to water, and I have within recent years tried the Vim leather, which has given better results than any I had heretofore used. The manufacturers of the Vim leather claim that their peculiar process of tanning preserves the fibers and brings them into closer contact. The process of tanning is one of oxidation by the use of a mineral, and for this reason the leather is not affected by oxide of iron, as are oak and hemlock tanned leather. For light pressures the leather is furnished without any filler, but for high pressure it is filled with a lubricant which primarily hardens the leather and renders it more impervious. It is claimed that owing to the process of tanning the Vim leather will absorb 45 per cent. of lubricant as compared with 15 per cent. absorbed by oak tanned leather. Furthermore, in molding the leather no water is used, the leather being heated and thus sufficiently softened. The leather is not affected by hot water.

The blame for the failure of leathers, however, is frequently not chargeable to the material, but to the construction of the metal against which the leather rests. The U leather should, as far as possible, be backed by the metal over its curved portion, and should have a metallic ring, hemp or other material inserted between the flaps. Furthermore, the surface over which the leather runs should be as smooth as possible. Some constructors in building cylinders in which pistons travel line them with brass, aiming at the double purpose of furnishing a smooth surface and covering any porous structure which may appear in the cast iron or cast steel cylinders. Where leathers are used in valves in such a way that they cross ports the construction should be such as to avoid blowing the leather out into the ports.

In choosing the material for pumps used in removing fluids, such as mine pumps, ammonia pumps, &c., the question of chemical action on material is of great importance. In many of the mines in the anthracite coal regions the water is so permeated by sulphuric acid that cast iron cannot be used with any satisfaction. For several years I preserved a specimen which I had broken from a pump that had been in use some four years. The metal had been ¾ inch thick. This was no longer cast iron, as the iron had been removed and only the graphite remained, and I could write with it as with a pencil.

The National Founders' Association Opposes Antiinjunction Bill.

WASHINGTON, D. C., March 24, 1906.—The National Founders' Association is taking an active part in the campaign to prevent the enactment of any legislation curtailing the power of the courts to issue injunctions in labor disputes. In the course of an extended hearing before the House Judiciary Committee during the past month George F. Monaghan, representing the association, made a strong argument against both the so-called Little and Gilbert bills, which have been pending since early in the present session.

The Pending Bills.

The first-mentioned bill, H. R. 4445, introduced by Representative Little of Arkansas, is strongly urged by labor organizations, while the latter measure, H. R. 9328, presented by Representative Gilbert of Indiana, seems to have few friends, being too mild for the leading labor agitators and yet sufficiently subversive of the present law to make it wholly obnoxious to the employing interests. Bill H. R. 4445 was originally introduced in the Fifty-seventh Congress by Representative Grosvenor of Ohio. Its design is to prevent a manufacturer or employer from invoking an injunction to protect his property against mob violence, the argument of the labor leaders being that injunctions should not issue to prevent offenses which can be punished subsequently provided the perpetrators can be discovered, arrested and convicted.

In the last Congress certain officials of the Administration, doubtless with a view to throwing a sop to organized labor, drafted what has sometimes been called a compromise anti-injunction bill, the actual work of framing the measure having been performed by James R. Garfield, chief of the Bureau of Corporations of the Department of Commerce and Labor. The text of this measure is as follows:

> That in cases involving or growing out of labor disputes neither an injunction nor a temporary restraining order shall be granted except upon due notice to the opposite party by the court in term, or by a judge thereof in vacation, after hearing, which may be *ex parte*, if the adverse party does not appear at the time and place ordered; provided that nothing herein contained shall be held to authorize the issuing of a restraining order or an injunction in any case in which the same is not authorized by existing law.

On its face this measure would appear to be fairly equitable, but the manufacturers and employers of the country have been quick to see the vital flaws which it contains. In the first place it is contended that there is no sound reason why cases "involving or growing out of labor disputes" should be differentiated from other cases in the matter of the issuance of injunctions or restraining orders. Such discrimination, it is claimed, is class legislation pure and simple. The second objection goes to the merits of the bill. While it may appear reasonable that "due notice" to the opposite party should be given before injunctions issue it is pointed out that if a manufacturer whose plant is menaced by a riotous mob cannot secure an injunction to prevent its demolition until he has served legal notice upon the individual members of the mob his property is likely to be destroyed before the remedy can be applied. The requirement that such notice should be served, it is claimed, would completely nullify the power of the courts to issue injunctions in critical cases. It is further pointed out that such injunctions are temporary only and may be dissolved if the adverse parties can make a satisfactory showing.

The hearings before the Committee were opened by the advocates of the Little bill, who took pains to state at the outset that they were opposed to the more conservative Gilbert measure. President Gompers of the American Federation of Labor was the principal speaker in behalf of the bill. He was followed by a number of representatives of manufacturing and employing interests who presented cogent reasons why neither bill should be enacted. Mr. Monaghan, representing the National Founders' Association, exhaustively discussed the inadequacy of ordinary legal proceedings to protect the interests of the employer.

It is believed that as the result of the strong representations made against these measures they will die in committee; but in view of the approaching Congressional campaign and the methods usually resorted to by the labor organizations to coerce members of Congress, the opponents of this class of legislation should maintain the utmost vigilance throughout the remainder of the present session. W. L. C.

R. H. Wolff, 445 Broadway, New York, has been appointed American representative of the Heroult electrical smelting furnace and process. Mr. Wolff has issued a circular in which he claims a great future for this process. Among the claims are the following: 1.—In connection with water power it will reduce ore to pig iron at a minimum cost. 2.—In connection with basic open-hearth furnaces it will replace old-fashioned crucible steel making, and replace acid open-hearth steel at a much lower cost, equal to the best crucible steel, only more uniform. 3.—The Heroult electrical mixer, as an adjunct in steel mills with large output of staple products such as billets, rails, structural steel, &c., will produce a superior and more uniform quality on a more economical basis than heretofore. Mr. Wolff was formerly the leading member of the firm of R. H. Wolff & Co., Limited, manufacturers of wire, New York City.

At the recent annual meeting of the Wellman-Seaver-Morgan Company, Cleveland, Ohio, the office of general manager, which has been vacant since the death last June of Charles H. Wellman, was filled by the election of S. H. Pitkin, whose present title will be first vice-president and general manager. Otherwise no changes were made in the officers of the company.

New Hendey Lathe Head.

Two new designs in lathe head construction have recently been produced by the Hendey Machine Company, Torrington, Conn. The tie bar head stock shown on the lathe in Fig. 1 is a distinctive feature in the company's line of belt driven engine lathes. The purpose of the tie bar, connecting the front and rear bearings of the spindle, is to reinforce the head to insure absolute rigidity, so that the spindle will be capable of supporting the heaviest cut possible with the use of high speed steel tools. The new head retains the annular form of bearings in the housings with taper fit for the spindle journals, and the self oiling, self adjusting features of the company's standard lathes.

The tie bar device renders the lathe specially capable of handling work when considerable end thrust is maintained, as in heavy chucking, under which an ordinary lathe is subject to backward deflection in the front housing, which tends to bind the spindle in its bearings and so cause it to run hard. The tie bar is now applied on all sizes of Hendey lathes from 14 to 24 inches, the one illustrated being the 16-inch size. It may be fitted with a three-step cone in the head stock in place of the four-step cone shown, to adapt it to high speed steel service where

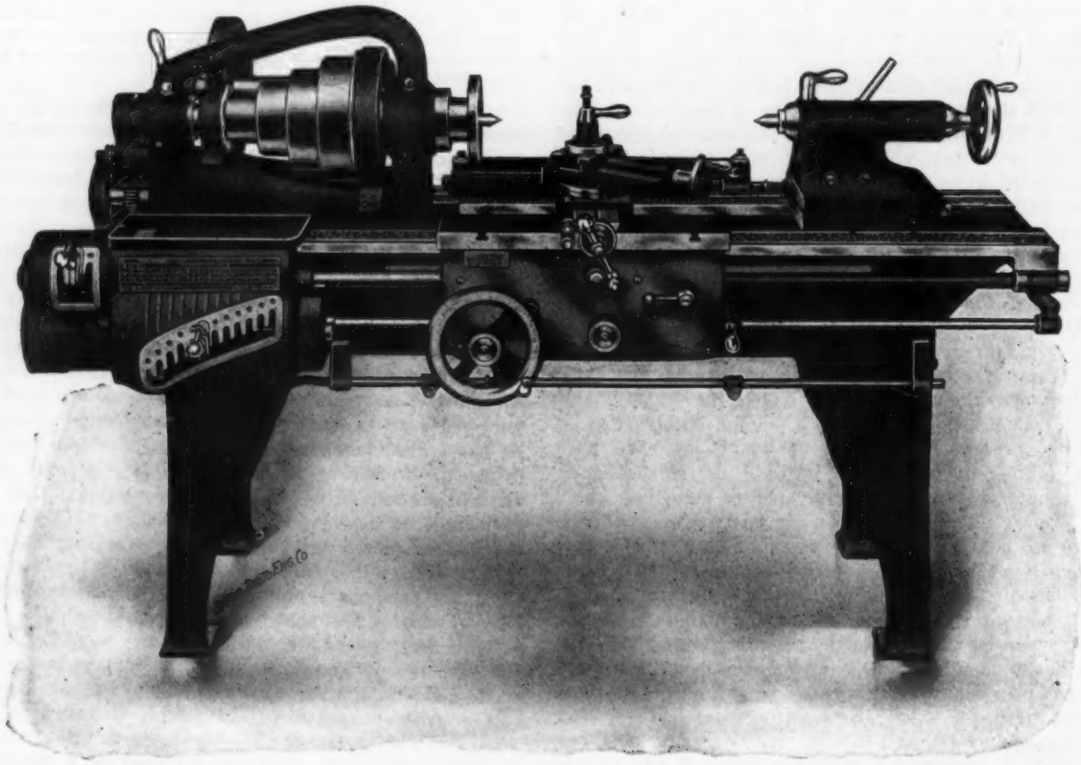


Fig. 1.—A 16-Inch Lathe with a Tie Bar Head Stock, as Made by the Hendey Machine Company, Torrington, Conn.

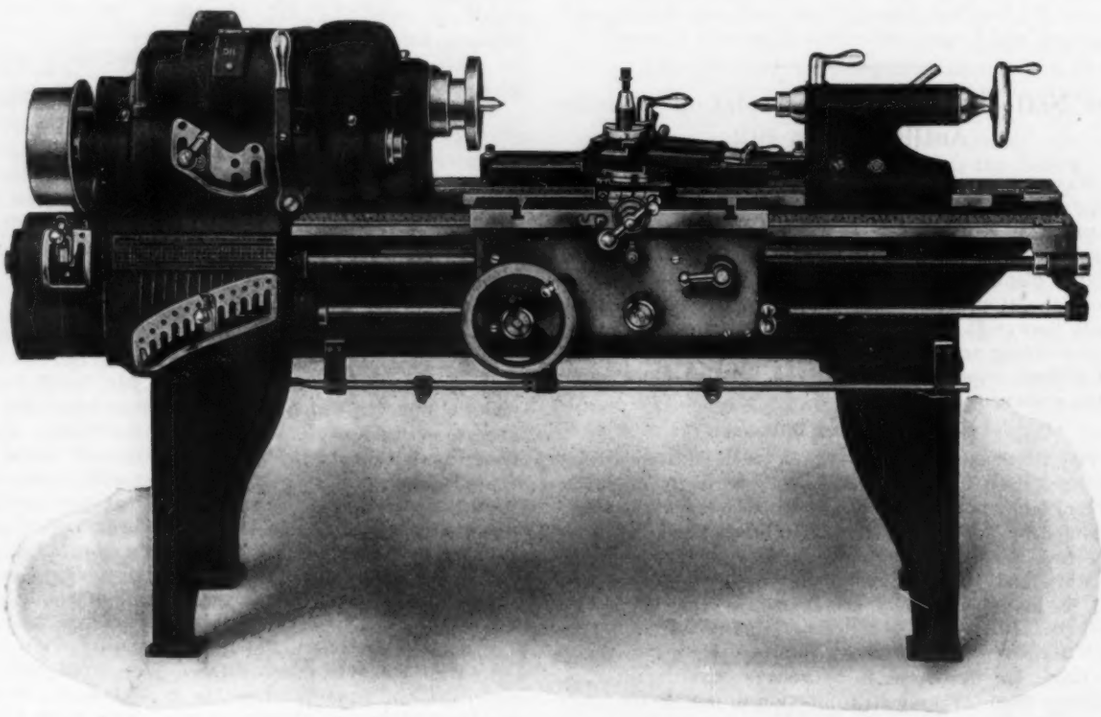


Fig. 2.—A 16-Inch Hendey Lathe with the New Pattern All Geared Head.

greater belt power is required. By absorbing the width of the four-step in the three one-third more belt surface is obtained, allowing increased driving power. With a two-speed countershaft 12 speeds are obtained.

Fig. 2 shows a lathe of the same size, 16 inches, with an all geared head. This has eight changes of speed from a driving shaft running at constant speed, four direct and four through back gears. The four direct speeds are obtained from a geared cone, A, in Fig. 3, on the spindle, driven through transfer gears on the rocker B. The back gears are permanently meshed with their corresponding gears, which run free on the spindle. Change from direct to back gear drive is controlled by the clutch C, working between the large gear on the cone and the face gear, the clutch being actuated by the lever shown at the front of the head. All gearing is of steel except the large face gear and large back gear, so that changing of speed, or the throwing in or out of the clutch in either direction may be safely accomplished without stopping the driving shaft except to slow down for the higher speed changes. With the countershaft running at 325 revolutions per minute speeds varying from 10 to 312 are obtained at the spindle; with the countershaft running at 416 revolutions the speeds are from 12.92 to 400.

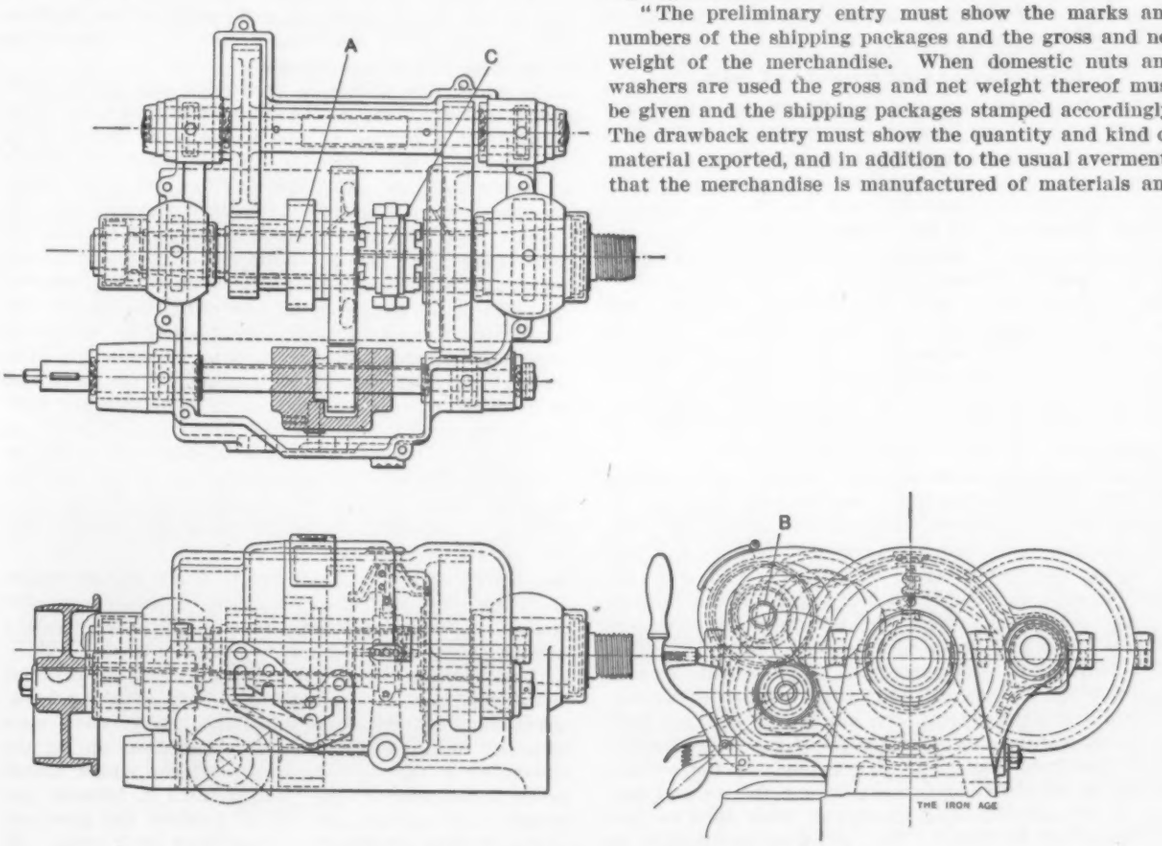


Fig. 3.—Details of the Hendey All Geared Lathe Head.

The heavy construction of the head with the steel gearing renders this lathe very effective for high speed steel work. In other respects the lathe has the features of the Hendey-Norton type of machine, manufactured by the builder. The head is the same length as the regular pattern type and the same distance is obtained between centers on the same length of bed. The bearings are annular in form, with cylindrical fit in annular housings. The journals of the spindle are tapered and fitted with ring oilers running in oil reservoirs. The back gears are keyed to the back gear shaft, and this and the driving shaft run in bearings fitted with ring oilers running in oil pockets.

Features to which attention is particularly called in this new all geared head stock are that it is compactly built, with no overhang outside the limits of the gear box and back gears of an ordinary lathe. All oiling of the shaft and gearing of the main spindle is accomplished without stopping, the facilities for this being complete and effective. The lathe is capable of a driving power at high speed, which is not possible on an ordinary belt cone driven lathe.

Drawback on Bolts, Screws, Etc.

WASHINGTON, D. C., March 26, 1906.—The Treasury Department has prepared an unusually interesting series of drawback regulations involving combinations of imported and foreign material, allowances for both valuable and worthless waste, &c. The regulations, which have been issued upon the application of the American Iron & Steel Mfg. Company of Lebanon and Reading, Pa., permit the rebate of the usual 99 per cent. of the duty, which in this case is paid upon imported scrap iron used in the manufacture of bolts, lag screws, rivets and dock and wharf spikes made for exportation, subject to the following requirements:

"The preliminary entry must show the marks and numbers of the shipping packages and the gross and net weight of the merchandise. When domestic nuts and washers are used the gross and net weight thereof must be given and the shipping packages stamped accordingly. The drawback entry must show the quantity and kind of material exported, and in addition to the usual averments that the merchandise is manufactured of materials and in the manner set forth in the manufacturer's sworn statement on file at the port of exit.

"A sworn statement must be filed with and made a part of the drawback entry showing the amount of scrap iron used, the weight of the finished articles, the quantity of valuable waste, the value of such waste at the works at the time of manufacture, the price at the works of the imported material and the quantity of worthless waste. The sworn statement may be verified by customs officers before liquidation of the entries by comparison of the manufacturer's record, which shall at all reasonable times be open to the inspection of such customs officers. The quantity of articles exported shall be verified by the export officer, and weights verified by a United States weigher.

"In liquidation the quantity of imported material which may be taken as the basis for the allowance of drawback may equal that declared in the sworn statement attached to the drawback entry as having been consumed, provided the same shall not exceed the net weight of the exported articles, with the proper allowance for worthless waste, not to exceed 4 pounds for every 100 pounds of finished product, and for valuable waste in proportion to the value of such waste at the time of manufacture and the price paid at the works for the imported material."

Coal Trade Regulation in England.

Among a very large percentage of the American public the belief prevails that trade regulation by means of combinations or working agreements is of comparatively modern origin. T. S. Laughlin, a prominent marine hardware manufacturer, Portland, Maine, who is greatly interested in commercial literature and is the possessor of an extensive library on the history of commerce from the earliest period, has addressed us a communication stating that "monopoly has always existed from the day that Jacob bought Esau's birthright for a mess of pottage, when he had all the visible supply, and furnishes the following very interesting extracts from Porter's "Progress of the Nation," showing the way in which the coal trade was regulated in England for over three-quarters of a century, and demonstrating that the owners of coal mines in those days were pastmasters in the art of monopoly of the home market and the exporting of the surplus at a loss:

Limitation of Coal Output and Sales.

The "limitation of the vend" existed, with some partial interruptions, from the year 1771 to 1845. This arrangement was no less than a systematic combination among the owners of collieries having their outlets by the Tyne, the Wear and the Tees to raise the price of coal to consumers by a self imposed restriction as to the quantity supplied. A committee appointed from among the owners held its meetings regularly in the town of Newcastle, where a very costly establishment of clerks and agents was maintained. By this committee not only was the price fixed at which coals of various qualities might be sold when sea borne for consumption within the kingdom, but the quantity was assigned, which, during the space of the fortnight following each order or "issue," the individual collieries might ship.

The manner in which this combination was conducted and the effect which it could not but have upon the interests of the consumers will best be understood by describing the course pursued upon the opening of a new colliery. The first thing to be determined in that case was the rank or "basis" to be assigned to the colliery. For this purpose one referee was appointed by the owners of the colliery and another by the Coal Trade Committee, who, taking into view the extent of the royalty or coal field secured, the size of the pits, the number and power of steam engines erected, the number of cottages built for workmen and the general scale of the establishment, fixed therefrom the proportionate quantity the colliery would be permitted to furnish toward the general supply, which the Directing Committee from time to time authorized to be issued. The point to be attained by the owners of the colliery was to secure for their establishment the largest basis possible, and with this view it was common for them to secure a royalty extending over from five to ten times the surface which it was intended to work, thus burdening themselves with the payment of possibly £5000 per annum or more of "dead rent" to the owner of the soil, who of course exacted such payment in return for his concession, although his tenants might have no intention of using it. Instead of sinking one or two pits, which would afford ample facility for working the quantity which the mine was destined to yield, a third and possibly a fourth pit were sunk at an enormous expense and without the smallest intention of their being used. A like wasteful expenditure was made for the erection of useless steam power and to complete and give an appearance of consistency to the arrangements, instead of building 200 cottages for the workmen, double that number were provided.

In this manner a capital of £160,000 to £200,000 might be invested for setting in motion a colliery allowed to raise and sell only such a quantity of coal as might be produced by means of an outlay of one-fourth or one-fifth of that amount. By this wasteful course the end of the colliery owners was attained. They got their basis fixed, if a large concern, as is here supposed, say, at 50,000 chaldrons, and this basis probably secured for them a sale of 25,000 chaldrons during the year, instead of 100,000 chaldrons which their extended arrangements would have enabled them to raise.

How Sales Were Regulated.

The Newcastle Committee met once a fortnight, or 26 times in the year, and, according to the price in the London market, determined the quantity that might be issued during the following fortnight. If the London price was what is considered high the issue was increased and if low diminished. If the "issue" were 20 on the 1000 the colliery here described would have been allowed to sell (20 × 50) 1000 chaldrons during the ensuing fortnight. The pit and establishment might be equal to the supply of 3000 or 4000 chaldrons; orders might be on the books to that extent or more; ships might be waiting to receive the largest quantity, but under "the regulation of the vend" not one bushel beyond the 1000 chaldrons could be shipped until a new issue should be made. By this system the price was kept up; and as regards the colliery owners, they thought it more for their advantage to sell 25,000 chaldrons at 30 shillings per chaldron than to sell 100,000 chaldrons at the price which a free competition would have brought.

If under this system of restriction any undue profit was obtained nothing can be more certain than that competition for a portion of this undue profit would cause the opening of new collieries until the advantage should be neutralized, and this result of the system at length became apparent. Every new colliery admitted into the "vend" took its share in the "issues" and to some extent limited the sales of all the rest. The disadvantage during all this time to the public at large is incontestable. The great staple manufactures of the country, being located in inland coal districts, happily did not suffer from this combination; but in other innumerable processes which require the aid of heat and which are carried on in cities and places where coal is not found, the addition to the cost of fuel thus occasioned placed the manufacturers at a great disadvantage, while the other inhabitants of those cities, especially the poor, were greatly injured by it. The loss to the community at large through the unprofitable investment of unnecessary capital no one can dispute.

Surplus Exported at Much Lower Than Home Prices.

There was another consequence resulting from this limitation of the home coal trade which it is necessary to state, as it was productive of great national evil.

The owners of collieries being restricted in their fortnightly issues to quantities which their establishments enabled them to raise in three or four days were naturally desirous of finding for their men during the remainder of the time some employment which should lessen the expense of maintaining them in idleness and spread over a large quantity of product the fixed expenses of their establishment and their dead rents. To this end coals were raised which must find a sale in foreign countries, and it practically resulted that the same quality of coals which if shipped to London were charged at 30 shillings 6 pence per Newcastle chaldron were sold to foreigners at 18 shillings for that quantity, giving a preference to the foreign buyer of 40 per cent. in the cost of English coal. By this means the finest kinds of coal used in London at a cost to the consumer of about 30 shillings per ton might be had in the distant market of St. Petersburg for 15 or 16 shillings, or a little more than half the London price.

Nut Coal Sold Abroad at Less Than Cost.

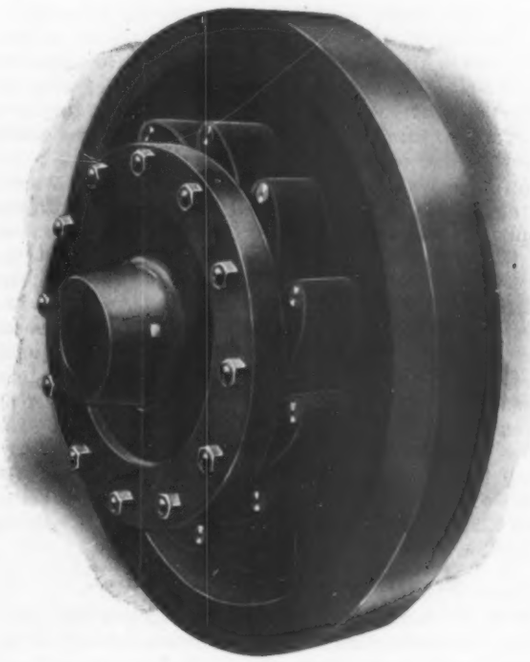
Nor was this the worst effect of the system. In working a colliery a great proportion of small coal is raised. The cost to the home consumer, under the system of limitation being exaggerated and the freight and charges being equally great upon this article as upon round coal, very little small coal would find a market within the kingdom, except on the spot where it was raised, and as the expense of raising it must be incurred the coal owners were forced to seek elsewhere for a market at any price beyond the mere cost of putting it on board ship. By this means nut coal, which consists of small pieces free from dust, which have passed through a screen, the bars of which are ⅝ inch apart, were sold to shipment for foreign countries at the low price of 3 shillings per ton. The intrinsic quality of this coal is

quite as good as that of the round coal from the same pits; it is equally suitable for generating steam and for general manufacturing purposes, and thus the manufacturers of Denmark, Germany, Russia, &c., obtained the fuel they required, and without which they could not carry on their operations, at a price not only below that paid by English manufacturers, but for much less than the cost at which it is raised. The coal owner might, it is true, have sold this small coal at home at a better price than he obtained from his foreign customer, but every ton so sold would have taken the place of an equal quantity of large coal, upon which his profit was made and by such home sale he would by no means have lessened his sacrifice, but the reverse.

In this way during three-quarters of a century every person using sea borne coal in Great Britain was exorbitantly taxed for the benefit of rival manufacturers in other countries.

Pelton Specialties.

The flexible leather link coupling illustrated is a specialty manufactured by the Pelton Water Wheel Company, San Francisco and New York, as an adjunct to its



The Pelton Flexible Coupling.

regular water wheel business. A contract for 20 pairs of couplings of this design was recently filled for the Santa Cruz Portland Cement Company, to be used for transmitting power from electric motors to the shafts of cement grinders. The special feature of the coupling is the flexibility obtained by using leather links, which allow sufficient play to permit the coupled shafts to be considerably out of alignment, a condition that might follow a settling of the foundations with reduction in the load carrying capacity. Its use obviates the necessity of a positive and continuous sole plate connection, usually required between the driving and driven machinery.

The coupling consists of two cast iron members turned all over and balanced. In the adjoining faces of each are inserted an equal number of steel taper pins driven in reamed holes, disposed in circles of unequal radius. The corresponding pins in each member of the coupling are connected by leather links made by cementing together a number of thicknesses of the best grade of leather and shaping them to oval form. The couplings are made of various sizes to accommodate any speed and carrying capacity.

The Pelton Company is about to place on the market a new type of turbine to be known as the Pelton-Francis. The tendency of electrical manufacturers to build large generators for high speeds has encouraged the development of Pelton wheels, built with particular reference to continuous service 24 hours a day and 365 days in the year, even for the largest units. To anticipate a demand for a high head and large capacity turbine and to cover a wide hydraulic field the company has secured the services of a German engineer of wide experience in this class of work, who, with the engineering staff of the company, has designed the new type of wheel. It is a modification of the Francis turbine, so well known in this country, Germany and Switzerland, with which are combined some of the special principles of the Pelton wheel. Preliminary tests are reported to show a remarkably high efficiency, and the design and construction are claimed to be exceedingly simple and reliable. The Pelton Company is now prepared to furnish estimates and specifications covering the Pelton-Francis turbines for all water pressures.

The Otis Elevator Company's Annual Report.

The Otis Elevator Company's report for the year ended December 31, 1905, compares as follows:

	1905.	1904.	Increase.
Net earnings	$912,938	$891,016	$21,922
Preferred dividend, 6 per cent.	339,697	335,970	3,727
Balance	$573,241	$555,046	$18,195
Common dividend, 2 per ct.	127,006	127,006	.....
Balance	$446,235	$428,040	18,195
Depreciation	246,235	228,040	18,195
Surplus	$200,000	$200,000	.....
Previous surplus	1,440,000	1,200,000	$200,000
Total surplus	$1,600,000	$1,400,000	$200,000

The general balance sheet compares as follows:

	1905.	1904.	Increase.
Assets.			
Plant account	$10,460,643	$10,003,347	$457,296
Cash	411,525	552,440	*140,915
Bills receivable	117,645	35,954	81,691
Accounts receivable	3,002,717	2,531,460	471,255
Inventories	1,443,160	1,220,145	223,015
Totals	$15,435,690	$14,342,346	$1,092,353
Liabilities.			
Preferred stock	$5,699,000	$5,599,500	$99,500
Common stock	6,350,300	6,350,300	.....
Gold notes	400,000	400,000	.....
Accounts payable	601,899	382,548	219,351
Preferred dividend	85,485	83,992	1,493
Common dividend	127,006	127,006	.....
Surplus	1,600,000	1,400,000	200,000
Totals	$15,435,690	$14,342,346	$1,092,353

* Decrease.

President W. D. Baldwin's statement to the stockholders gives some details of the company's enlargement of its works as under way and contemplated, and says that if the company's business continues as prosperous as now indicated it is the intention of the directors to place the common stock on a 3 per cent. basis, payable 1½ per cent. semiannually, the first payment on this basis to be made on October 15, 1906. The directors may also decide to issue the remaining $772,000 preferred stock now in the treasury of the company, in which case the stock will be offered to present shareholders pro rata at its par value.

A striking indication of the awakening of China is given in a recent press dispatch from Canton stating that the offering of the stock of the Hankow-Canton Railroad for subscription caused such a rush of applicants that the streets in the neighborhood of the offices were blocked and it was necessary to call out soldiers to manage the crowds. Chinese sentiment regarding railroads has evidently undergone a great change.

Health Commissioner Darlington of New York City has sent out notices to 60 firms calling attention to the ordinance relating to smoke and notifying them to comply with its provisions. The ordinance requires that after five days and a second notice prosecutions can be made if the smoke nuisance is not abated.

The National Metal Trades Association.

Eighth Annual Convention, Held at Cleveland, Ohio, March 21 and 22, 1906.

As stated in our report printed on pages 1045 and 1046 of the last issue of *The Iron Age*, the most important matter before the convention was the report of the joint committee on a plan of co-operation of the National Metal Trades Association with the National Founders' Association. This report was printed in full and the personnel of the joint committee was given in our last issue. The committee, it will be recalled, consisted of six of the most active workers of both organizations. The report outlined a plan which not only advocated co-operation, but in the minds of many members of the Metal Trades Association embodied a scheme of virtual consolidation of the two bodies.

Co-operation with the National Founders' Association.

The discussion of this report consumed the major portion of the time allotted to the convention, and the members showed, through the forceful and intelligent manner in which they argued the matter, that they were thoroughly alive to the vital importance of the question at issue and were working keenly and earnestly to prevent the slightest misstep in marching toward the advancement of the employers' cause. The discussion indicated that while all heartily favored co-operation, there is a strong sentiment against the adoption of any action which might at this time terminate in an actual combination of forces. The two organizations, it was argued, are working along lines which in detail do not run exactly parallel, although both associations are aiming to accomplish the same objects. This, it was held, is due to the somewhat different conditions existing in the molding and machinists' trades and to the necessarily different methods pursued by the two bodies in handling these conditions. It was the consensus of opinion that another year should be allowed to afford time for study of the situation and to prove just how far harmonious co-operation can be carried on without the adoption of a course as radical as that suggested in the plan outlined in the report of the committee. The result of the discussion was the passing of resolutions approving the efforts of the committee and continuing it with the belief that it may hit upon some plan that may prove a solution of the problem. The resolutions, which were offered by C. Bermingham of the Canada Locomotive Company, Limited, Kingston, Ontario, are as follows:

Resolved, That the convention, recognizing that the work of the National Founders' Association is along the same lines, and has for its end the same object as the work being performed by this association, hereby approves of the idea of a closer co-operation of these two sister organizations, and requests the committee having this matter in charge to continue its efforts, believing that such will result in the perfection of a plan which when presented will receive the practical and unanimous support of this association.

Resolved, That the thanks of this association are hereby tendered the members of this committee for the effort made and the services rendered by them in this matter.

Discussion of the Proposed Co-operation.

The discussion was opened by H. N. Covell, superintendent of the Lidgerwood Mfg. Company, New York, and past president of the association. It was in the report of Mr. Covell a year ago that the first impetus was given the present movement looking toward the closer co-operation of the two associations. Mr. Covell is active in both organizations and consequently his views were accepted as voicing the sentiments of those members who operate both foundry and machine shop and therefore have kept more directly in touch with the movements of both associations. He said that the establishment of closer relations between the two bodies will be a step in the right direction. Leaving out the details of the plan suggested by the committee, something ought to be accomplished at this meeting which would join the efforts of both associations where such united effort would result beneficially to all concerned. He cited the case of his own company, which is a member of the Founders' as well as the Metal Trades Association. He told how the burden of belonging to both could be lessened through the economies in operation gained by the elimination of duplication of effort, should both organizations work together.

J. C. Hobart of the Triumph Electric Company, Cincinnati, was called upon for his views. He said that he feared that a mistake might be made in confusing co-operation with combination. The committee's report showed that it had combination and not co-operation in mind. He stated that he could not see how the efficiency could be increased, as the commissioner's report showed that too much work is already embodied in the duties of his office. No one man, he said, could possibly fulfill the position of commissioner of both associations. With two commissioners there can be no saving of expense. He suggested that trouble might be encountered with the men, owing to a possible unwillingness on the part of the machinists to be treated *en masse* with the molders. Certain foundries, he said, operate under agreements with the unions, and this is contrary to the principles of the National Metal Trades Association. A junction between the two associations might under these conditions create conflict between the molders and machinists. He suggested that the report be recommitted to the committee with the suggestion that it draw up a report outlining simply a plan for co-operation and eliminating the features which go beyond that point.

A. C. Pessano of the Great Lakes Engineering Works, Detroit, Mich., who has been actively identified with the upbuilding of both organizations, related a good deal of the history of the present movement, stating that the object was simply to accomplish better net results. The merging of the two organizations, he said, was not the object of the committee. He also stated that the National Founders' Association has no grievance with the union. He spoke of a new line of attack at present being employed by the union and which would have to be met by the employers. He referred to legislative matters. The unions, he said, were following this line very persistently, acting through the American Federation of Labor. In such work the two organizations could unite with better effect than if an attempt were made by each body to handle the matter by itself.

Strongly Opposed by E. F. Du Brul.

E. F. Du Brul of the Miller-Du Brul-Peters Mfg. Company, Cincinnati, Ohio, and former commissioner of the Metal Trades Association, said: "We do not need any more by-laws to bring about a closer co-operation of the two associations. There are many ways in which we can work together without having actually to form a consolidation of our interests. On educational work both this association and the National Founders' Association should co-operate with the Citizens' Industrial Association of America, which should actually direct the work. So far as legal work is concerned, I have found that there are not enough lawyers in this country who know the injunction laws as pertaining to labor disputes. Here we can co-operate with the American Anti-Boycott Association, which is up on the legal end of the controversy, and we can get quick action, because this association has its lawyers distributed about in the large cities of this country. It is of no particular interest to a machine shop to become involved in a controversy affecting only a foundry, and the owner of a jobbing foundry would have no especial interest in taking part in trouble affecting only a machine shop. I have found that the jobbing foundries constitute the hardest class in the world to hold in line. This is evidenced by the lack of co-operation between the Stove Defense Association and the National Founders' Association. The real co-operation of the two associations depend entirely upon their officers. If they had a definite place to go to and a definite time to meet they could very readily co-operate without the necessity of anything further in the way of a combination of duties.

As for the commissioners' work, I know that his duties in either association are enough for any one man. The National Metal Trades Association is formed on different lines from the Founders' Association, in respect to its locals. It starts with the local association, with its labor bureau, and works on up until its scope becomes national. There is no parallel to our local association, however, in the National Founders' Association. This, I think, must be brought about before any such plan as is suggested by the committee can become feasible. During the coming year let us arrange so that our officers may meet not only those of the National Founders' Association, but of all other employers' associations, and then we may find a way or a method of broader co-operation than is even suggested in the report of our committee."

Closest Possible Co-operation Urged.

F. K. Copeland of the Sullivan Machinery Company, Chicago, announced that he represented 20 members of the association constituting the Chicago delegation and was instructed to report that they are strongly in favor of the closest possible co-operation for the best interests of both associations.

John Peebles of the J. I. Case Threshing Machine Company, Racine, Wis., supported the plan outlined in the committee's report, stating that the foundry is essential to the machine shop, whether both are owned by one party or not. As the machine shop is dependent upon the foundry for castings, it is as much to the interests of the owner of a machine shop to see industrial peace in the foundry as it is to the owner of the foundry. A combination of efforts of the two associations would result in strengthening the positions of both organizations and thus assist in bringing about a speedy termination of any trouble which might be met in either the machine shop or the foundry.

William Lodge of the Lodge & Shipley Machine Tool Company, Cincinnati, Ohio, spoke of the excellent feeling now existing among the machinists in Cincinnati where the large machine tool factories, as a rule, do not operate their own foundries and where the machinists have found much better conditions to exist since the withdrawal of their affiliations with the union. He said that he was in favor of seeing both associations work together, but that he scarcely thought it would be feasible to do so at present.

O. P. Briggs, president of the National Founders' Association, made a short speech in support of the plan of the committee. He said that co-operation will be to the benefit of every member of both associations, and as for the work of the commissioner his own experience while fulfilling the duties of acting commissioner of his association led him to believe that one man could handle both associations more easily than he could either one alone.

C. Bermingham of the Canadian Locomotive Company, Limited, Kingston, Ont., quoted the views of W. H. Pfahler as expressed at the November meeting of the Founders' Association in support of co-operation between the two organizations. He concluded by introducing the resolution, which was finally passed and which left the matter open for further consideration.

The Subject Again Discussed on Thursday.

The subject was laid over to be taken up again on Thursday morning when it was opened by E. F. Du Brul, who in a clear and concise manner pointed out the several lines in which both associations do not run exactly parallel. The expense of operation is a different matter in the case of each organization. It costs the members of the Metal Trades Association considerably less per operative than it does the members of the Founders' Association. To a concern operating both machine shop and foundry this feature does not make any material difference, but those who operate machine shops and do not operate foundries will have to carry a portion of the expense of the jobbing foundry, which does not operate a machine shop. He concluded: "If our methods are right for us and if their methods are right for them, then it will be a difficult matter to combine our work without causing one branch of it to suffer."

E. M. Heyl of Heyl & Patterson, Pittsburgh, Pa., outlined the conditions existing in Pittsburgh, where there are but two members of the Metal Trades Association and a large number of members of the Founders' Association. The co-operation he characterized as being only a forerunner of amalgamation, which, he said, would impose upon the operators of machine shops a large burden now borne exclusively by the founders.

E. P. Robinson of the Atlantic Works, East Boston, Mass., said: "I should be as strongly opposed to a combination as any one, but as I understand the plan of our committee it is intended that the finances of the two associations should be kept separate. The founders, I understand, are not in as strong a position as we are today. We ought to have co-operation practically along the lines laid out by the committee. It is an advantage for the machine shops to have the foundry running and *vice versa*. The two branches run so closely together as to make the objects of one the objects of the other."

Fred A. Geier of the Cincinnati Milling Machine Company, Cincinnati, Ohio, and first vice-president of the Metal Trades Association, who is also a member of the Joint Committee which made the report under discussion, said in part: "As a member of the committee recommending the plan now before you I think that there are some explanations due to this convention. Our Administrative Council adopted that report as a body, but when it was adopted your council had not had an opportunity to hear from the membership of the association. Since its adoption by the council we have had an opportunity to hear from the members and to-day your Administrative Council is divided as to the feasibility of the plan outlined in the report. I heartily second the resolutions presented yesterday afternoon by Mr. Bermingham and trust that during the coming year the officers of our associations will find a way of working in closer harmony, so that by our next convention we shall know exactly what can be done along these lines."

Mr. Bermingham's resolutions, which are printed in full at the beginning of this article, were unanimously carried.

An excellent paper submitted by R. M. Downey, secretary of the Keystone Driller Company, Beaver Falls, Pa., on

Profit Sharing as a Peace and Profit Maker,

and which will be found on another page, called forth hearty applause and many remarks of approbation.

E. F. Du Brul, in speaking on the subject of the paper, said: "We find in Cincinnati, where we have extended the premium system and similar attractions for the men, that by hitting them in their pocketbooks we have made unionism an unattractive thing to the average machinist. I believe that it will be a plain proposition for this association to establish a bureau or appoint an expert to go round and visit the shops of our members, as well as such shops as employ profit sharing devices of various kinds, and study conditions with a view of advising our members as to the best means of inaugurating systems whereby the workingmen may be made friends of their employers."

As a result of this suggestion the following resolution was adopted:

Resolved, That the Administrative Council be requested to consider the advisability of employing a consulting expert on premium, bonus and other gain sharing plans, whose services might be placed at the disposal of the membership on such terms as may be found desirable.

J. H. Cone, the assistant secretary of the National Metal Trades Association, delivered a very interesting address on "The Possibilities of Organization," proving to the members that their secretary had chosen as his assistant a man possessing the qualifications necessary for the performance of the delicate duties of the office.

J. Kirby, Jr., of the Dayton Mfg. Company, Dayton, Ohio, in an able address stirred the members to a realization of the necessity of greater effort on their part concerning legislative matters. As a result the following resolution was passed:

Resolved, That the incoming Administrative Council be and is hereby instructed to appoint a committee of three, to be known as a Committee on Legislation, and to define its duties.

J. A. Emery, secretary of the Citizens' Industrial Association of America, made a strong speech along the lines of defense work generally, and telling how the employers are combatting unionism. This led to the passage of the following resolutions:

Whereas, We realize the community of interest between all practical and efficient industrial defense associations engaged in the promulgation and vindication of right industrial principles; and

Whereas, The Citizens' Industrial Association of America, composed of several hundred industrial associations, is striving to arouse, enlighten and organize a sound public opinion upon industrial questions; be it

Resolved, That we approve its purpose and methods, and assure it of our hearty co-operation; be it further

Resolved, That the Administrative Council of the National Metal Trades Association be instructed to consider ways and means of co-operating through our executive officers with said association in its efforts to arouse the American people to a true realization of the abuses and dangerous tendencies of modern unionism.

President Gardner read the following resolution which he had received by telegraph from W. H. Pfahler:

Whereas, The greatest safeguard to our business lies in the proper training of our successors, who in this age require a broader knowledge than we can thoroughly supply in our plants;

Whereas, The training of young men in the art and theory of our industries, the exercise of executive skill and the highest standard of manhood is in line with the problems which confront us;

Whereas, The Winona Technical Institute of Indianapolis is organized to promote the education and training of foremen and superintendents, and is now establishing a foundry school under direction of the National Founders' Association;

Resolved, That a committee of three be appointed to investigate the plan and scope of the institution and report to the incoming council whether it may be utilized to the benefit of this association and its members.

Ship subsidy and the metric system were not forgotten in the resolutions passed, the following being placed on record:

Resolved, That the National Metal Trades Association, in annual convention assembled, hereby gives its most emphatic indorsement and approval of United States Senate bill No. 529, known as the Gallinger bill, for the aid of the American merchant marine, and this convention recommends and strongly urges upon the House of Representatives the passage of this bill, and, further, that the secretary of this convention is hereby directed to transmit a copy of this resolution to the chairman of the Committee on Merchant Marine and Fisheries of the House.

Whereas, The House of Representatives at Washington has under consideration at the present time a bill variously known as House bill No. 8988 and as the Littauer bill, aiming to fix the standard of weights and measures in the United States by the adoption of the metric system of weights and measures, said bill reading as follows: "That from and after July 1, 1908, all of the departments of the Government of the United States in the transaction of business requiring the use of weight and measurement shall employ and use the weights and measures of the metric system;" and

Whereas, We believe that such legislation would not abolish from use our present standards, but would cause confusion by adding one more system to those now in use; and

Whereas, An additional system would force us manufacturers to use two systems and keep on hand two sets of all patterns, drawings, standard and special small tools, jigs, fixtures and measuring devices, and also carry a double stock of standard small parts of our product, all of which would load on us an unbearable extra expense and would not gain us a single dollar; therefore be it

Resolved, That the members of the National Metal Trades Association, as individuals and as a body, are unalterably opposed to any legislation that has for its object the adoption of the metric system as the one legal standard of weights and measures in the United States; and

Whereas, The above named House bill No. 8988, if passed, would make the metric system the standard for use in all Government departments in the transaction of all business, and therefore affect the manufacturer immediately when dealing with the Government and in future when dealing with those who would follow the Government's example; be it therefore further

Resolved, That the members of the National Metal Trades Association, as individuals and as a body, unqualifiedly condemn said House bill No. 8988 as a piece of special legislation that would result in great injury to the manufacturing interests of the United States; be it further

Resolved, That a copy of these resolutions be sent to each member of the Committee on Coinage, Weights and Measures; be it further

Resolved, That the President of this association appoint a committee of five to appear before the Committee on Coinage, Weights and Measures to present personally the protest of this association.

The following committees were appointed:

CONVENTION COMMITTEE.—E. M. Heyl, Heyl & Patterson, Pittsburgh, Pa.; O. B. Kinnard, Kinnard-Haines Company, Minneapolis, Minn.; A. M Powell, Woodward & Powell Planer Company, Worcester, Mass.; A. H. Bullard, Bullard Machine Tool Company, Bridgeport, Conn.; Robert Biddle, John L. Gaumer Company, Philadelphia, Pa.

WAYS AND MEANS COMMITTEE.—Frank L. Coes, Coes Wrench Company, Worcester, Mass.; E. A. Watson, Caldwell-Watson Foundry & Mfg. Company, Birmingham, Ala.; W. M. Taylor, Chandler & Taylor Company, Indianapolis, Ind.; J. A. B. Patterson, Standard Gauge Steel Company, Beaver Falls, Pa.; I. I. Beinhower, Lincoln Iron Works, Rutland, Vt.

AUDITING COMMITTEE.—Howard Eells, Bucyrus Company, South Milwaukee, Wis.; Wm. Medart, Medart Patent Pulley Company, Cleveland, Ohio; F. M. Cresson, Geo. V. Cresson Company, Philadelphia, Pa.

COMMITTEE ON CONSTITUTION AMENDMENTS.—J. C. Hobart, Triumph Electric Company, Cincinnati, Ohio; F. C. Caldwell, H. W. Caldwell & Son Company, Chicago, Ill.; Edgar Penney, Newburg Ice Machine & Engineering Company, Newburg, N. Y.

COMMITTEE ON HOURS AND WAGES.—C. J. Carew, Chicago Pneumatic Tool Company, Franklin, Pa.; C. S. Bonsall, Buckeye Engine Company, Salem, Ohio; D. D. Russell, Russell Boiler Works Company, South Boston, Mass.

COMMITTEE ON STRIKES AND LOCKOUTS.—T. L. Richmond, Buffalo Scale Company, Buffalo, N. Y.; E. P. Robinson, Atlantic Works, East Boston, Mass.; W. B. Morrison, McIntosh, Seymour & Co., Auburn, N. Y.

Election of Officers.

The report of the Nominating Committee announced the selection of the following officers and councillors, all of whom were unanimously elected:

President, W. D. Sayle, Cleveland Punch and Shear Works Company, Cleveland, Ohio; first vice-president, M. H. Barker, American Tool & Machine Company, Boston, Mass.; second vice-president, F. K. Copeland, Sullivan Machinery Company, Chicago, Ill.; treasurer, William Lodge, Lodge & Shipley Machine Tool Company, Cincinnati, Ohio.

Members of the Administrative Council, term to expire 1908—William M. Taylor, Chandler & Taylor Company, Indianapolis, Ind.; J. H. Schwake, William Sellers & Co., Incorporated, Philadelphia, Pa.; J. Kirby, Jr., Dayton Mfg. Company, Dayton, Ohio.

The new president was escorted to the chair and the new officers in turn made appropriate remarks, thanking the members for the confidence reposed in them and pledging their best efforts for the ensuing year.

O. B. Kinnard, who was chairman of the Nominating Committee, announced that he did not wish the members to labor under any misapprehension concerning the selection of the committee as to the presidency. F. A. Geier, who stood next in line for that office and whose enthusiastic work in behalf of the association certainly merited the highest office in the gift of the association, had advised the committee that, owing to ill health, it would be absolutely impossible for him to consider accepting the presidency.

The Tribute to Robert Wuest.

A rising vote of thanks was given to Secretary and Acting Commissioner Robert Wuest for the admirable manner in which he performed the strenuous duties of his dual office. That this was done most heartily was evidenced by the vim with which the members jumped to their feet in greeting the proposition, and the long and renewed applause which followed. Retiring President Gardner supplemented the enthusiasm of the members by stating that no one knew better than he how faithfully and ably Mr. Wuest had carried on the details of the association's work during the last few months, and how materially he had contributed in making the last administration a most successful one, both in the gaining of new members and in diplomatically handling situations which foreboded trouble until disposed of by Mr. Wuest in his adroit manner. That Mr. Wuest has been very popular with the rank and file of the membership has always been apparent to any one following the meetings of the association. The tribute paid him at Cleveland, however, proved that he had shown himself capable of "doing things" meriting not only the applause of a popular following, but the just approbation of one of the strongest bodies of America's manufacturers.

The Banquet.

On Wednesday evening an informal dinner was tendered to the members and their guests by the manufacturers of Cleveland. The large banquet hall of the Hol-

lenden Hotel was elaborately decorated, and the numerous tables festooned with flowers presented a pretty picture. W. B. Cowles of the Long Arm System Company, Cleveland, Ohio, acted as toastmaster, filling that office most acceptably. Prominent among the speakers was J. H. McKean of Cleveland, who made a speech abounding in witticisms and occasionally touching on legislative matters now before the Ohio Legislature. Other speakers were Harvey D. Goulder, M. D. Pratt, Charles Bassett, William H. Hunt, J. A. Emery, secretary of the Citizens' Industrial Association of America, New York; J. W. Gardner, the retiring president; George Smart, John A. Hill and A. C. Pessano.

The Meeting of the New Administrative Council.

Immediately after the adjournment of the convention the new administrative council held its first meeting. All of the members were present, and owing to the shipshape condition of the affairs of the acting commissioner the work was dispatched with unusual expeditiousness.

The following Finance Committee was selected: J. Kirby, Jr., George K. Garvin, Wm. Lodge and M. H. Barker, and Robert Wuest, *ex-officio*. The Committee on Technical Education, proposed by Mr. Pfahler's resolution, will consist of Wm. Lodge, W. H. Pfahler and H. N. Covell. The Committee on Legislation, proposed by the resolution of J. Kirby, Jr., will consist of J. Kirby, Jr., Howard P. Eells and Wm. M. Taylor.

The reports of the district chairmen were printed in pamphlet form for the convenience of the members of the association. These reports, in addition to summarizing conditions in the various localities covered, named the new chairmen, vice-chairmen and committeemen elected by the members of the committees at their recent district elections. These are as follows:

First District—States of Maine, New Hampshire, Rhode Island and Massachusetts east of Worcester County: E. P. Robinson, the Atlantic Works, East Boston, Mass., chairman; D. D. Russell, James Russell Boiler Works Company, South Boston, Mass., vice-chairman; R. C. Payson, the Portland Company, Portland, Maine; E. E. Bartlett, 364 Atlantic avenue, Boston; George F. Lawley, George Lawley & Son Corporation, South Boston, Mass.

Second District—States of Vermont, western Massachusetts and Connecticut: G. T. Brown, Brown Cotton Company, New London, Conn., chairman; A. H. Bullard, Bullard Machine Tool Company, Bridgeport, Conn., vice-chairman; A. W. Whitcomb, Whitcomb-Blaisdell Machine Tool Company, Worcester, Mass.; G. F. Brooks, Harrington & Richardson Arms Company, Worcester, Mass.; George W. Jackman, Springfield Mfg. Company, Bridgeport, Conn.

Third District—New York City and New Jersey north of and including Trenton: F. H. Stillman, the Watson-Stillman Company, New York City, chairman; William Druett, M. T. Davidson, Brooklyn, N. Y., vice-chairman; Peter Weber, Edison Phonograph Works, West Orange, N. J.; A. B. See, A. B. See Electric Elevator Company, New York City; Chas. A. Haney, Sloan & Chase Mfg. Company, Limited, Newark, N. J.

Fourth District—New York State, exclusive of Greater New York: T. L. Richmond, Buffalo Scale Company, Buffalo, N. Y., chairman; H. H. Franklin, H. H. Franklin Mfg. Company, Syracuse, N. Y., vice-chairman; M. D. Knowlton, M. D. Knowlton Company, Rochester, N. Y.; F. W. Haskell, the Carborundum Company, Niagara Falls, N. Y.; W. B. Morrison, McIntosh, Seymour & Co., Auburn, N. Y.

Fifth District—Eastern Pennsylvania, southern New Jersey, Maryland and Delaware: J. H. Schwacke, Wm. Sellers & Co., Incorporated, Philadelphia, Pa., chairman; F. Macomb Cresson, Geo. V. Cresson Company, Philadelphia, Pa., vice-chairman; J. S. Detrick, Detrick & Harvey Machine Company, Baltimore, Md.; Thos. Shipley, York Mfg. Company, York, Pa.; W. S. Hallowell, Harrison Safety Boiler Works, Philadelphia, Pa.

Sixth District—Erie, Pa., western Pennsylvania and West Virginia: G. T. Bliss, Erie City Iron Works, Erie, Pa., chairman; E. W. Heyl, Heyl & Patterson, Pittsburgh, Pa., vice-chairman; J. T. Hadley, Jos. Reid Gas Engine Company, Oil City; C. J. Carew, Chicago Pneumatic Tool Company, Franklin; R. M. Downey, Keystone Driller Company, Beaver Falls.

Seventh District—Cincinnati and suburbs, 25 miles radius: P. G. March, president; Si P. Egan, vice-president; O. H. Broxterman, treasurer; H. H. Klusman, secretary; H. C. Hoefinghoff, Jno. W. Neil, W. T. S. Johnson, Executive Committee.

Eighth District—Southern Ohio: Frank I. Joyce, Joyce-Cridland Company, Dayton, Ohio, chairman; J. Kirby, Jr., the Dayton Mfg. Company, Dayton, Ohio, vice-chairman; R. H. Jeffrey, Jeffrey Mfg. Company, Columbus, Ohio; D. B. Kirk, the C. & G. Cooper Company, Mt. Vernon, Ohio; F. H. Lindenberg, Columbus Brass Company, Columbus, Ohio.

Ninth District: Geo. Bartol, Otis Steel Company, Limited, Cleveland, Ohio, chairman; C. S. Bonsall, Buckeye Engine Company, Salem, Ohio, vice-chairman; C. E. Thomas, Cleveland Punch & Shear Works Company, Cleveland, Ohio; J. M. Ricard, Ricard Boiler & Engine Company, Toledo, Ohio; L. H. Kittredge, Peerless Motor Car Company, Cleveland, Ohio.

Tenth District—State of Michigan: F. T. Ducharme, the Ireland & Mathews Mfg. Company, Detroit Mich., chairman; George A. True, Northern Engineering Works, Detroit, Mich., vice-chairman; Theo. P. Byram, Byram & Co., Incorporated, Detroit, Mich.; H. M. Leland, Leland & Faulconer Mfg. Company, Detroit, Mich.

Eleventh District—State of Indiana: W. J. Woolley, Woolley Foundry & Machine Company, Anderson, Ind., chairman; W. D. Hodson, National Sweeper Company, Marion, Ind., vice-chairman; James O. Parker, Hellman Machine Works, Evansville, Ind.; Arthur R. Baxter, the Keyless Lock Company, Indianapolis, Ind.; Wm. M. Taylor, Chandler & Taylor Company, Indianapolis, Ind.

Twelfth District—Chicago and suburbs, 25 miles radius: F. C. Caldwell, H. W. Caldwell & Son Company, Chicago, Ill., chairman; L. C. Walker, Aermotor Company, Chicago, Ill., vice-chairman; John D. Hibbard, the John Davis Company, Chicago, Ill.; Frank S. North, Union Special Machine Company, Chicago, Ill.; E. E. Hanna, Hanna Engineering Works, Chicago, Ill.

Thirteenth District—State of Illinois (exclusive of Chicago), Missouri and Iowa: Geo. F. Steedman, Curtis & Co. Mfg. Company, St. Louis, Mo., chairman; Wm. Medart, Medart Patent Pulley Company, St. Louis, Mo., vice-chairman; C. A. Barnard, Barnard & Leas Mfg. Company, Moline, Ill.; L. Auiman, Eagle Iron Works, Des Moines, Iowa; F. E. Turner, Kansas City Elevator Mfg. Company, Kansas City, Mo.

Fourteenth District—State of Wisconsin: S. L. G. Knox, the Bucyrus Company, South Milwaukee, Wis., chairman; A. Aldrich, Beloit Iron Works, Beloit, Wis., vice-chairman; G. W. Hanley, A. W. Stevens Company, Marinette, Wis.; T. W. Sheriffs, Sheriffs Mfg. Company, Milwaukee, Wis.; F. Robinson, J. I. Case Threshing Machine Company, Racine, Wis.

Fifteenth District—State of Minnesota: J. L. Record, Minneapolis Steel & Machinery Company, Minneapolis, Minn., chairman; C. A. Luster, Clyde Iron Works, Duluth, Minn., vice-chairman; C. S. Yarnell, Moore Carving Machine Company, Minneapolis, Minn.; O. B. Kinnard, Kinnard-Haines Company, Minneapolis, Minn.; A. W. Strong, Strong & Northway Mfg. Company, Minneapolis, Minn.

Sixteenth District—Southern States: J. W. Glover, Glover Machine Works, Marietta, Ga., chairman; H. De Loach, De Loach Mill Mfg. Company, Atlanta, Ga., vice-chairman; J. A. Lombard, J. A. Lombard Iron Works, Augusta, Ga.; M. Llewellyn, the Walsh & Weidner Boiler Company, Chattanooga, Tenn.

Seventeenth District—Canada: G. W. Watts, Canada Foundry Company, chairman; F. B. Poison, Poison Iron Works, vice-chairman; C. Bermingham, Canadian Locomotive Company, Kingston; G. H. Fensom, the Otis-Fensom Elevator Company; J. O. Thorn, Metallic Roofing Company.

The Manhattan Bridge.—No advocates of the eye bar system of bridge building appeared at the public hearing March 23 before Comptroller Metz of New York City for the purpose of discussing the relative merits of the eye bar and wire cable construction of the new Manhattan Bridge. Mr. Metz had been told that the eye bar was cheaper and could be more quickly put in place, and he announced a week previously that he would favor the drawing of alternative specifications, permitting bidding for eye bars, if it could be shown to him that it was to the interest of the city to do so. The nonappearance of supporters of eye bar construction was not because it does not have stanch friends, but was probably due to the fact that the bridge builders with facilities for making the large eye bars needed are so well supplied with work that they are disinclined to bid on a project of such magnitude. At the close of the hearing Mr. Metz said that he would no longer bother about the eye bar system. The Manhattan Bridge will therefore be a wire cable bridge, and Commissioner Stevens will advertise for bids within a week or two.

Compressed Air announces that with its issue of May it will appear in enlarged form and under new management. Hereafter it will be published by the Kobbe Company, 90-92 West Broadway, New York. Founded ten years ago, it is the only publication devoted exclusively to the field of compressed air in all its applications. W. L. Saunders will remain as editor-in-chief, W. R. Hulbert will be managing editor and P. F. Kobbe, Jr., will be business manager.

Profit Sharing as a Peace and Profit Maker.*

BY R. M. DOWNEY, BEAVER FALLS, PA.

It is presumed that if we could have plenty of peace and profits most of us would be fairly well satisfied. We might want a few garnitures thrown in on the side. Some might even be satisfied with the profits and let the peace go, but most of us, we know, are generous enough to prefer that they come together. As a matter of fact they ought to go together, and we occupy your time for a few moments with a plan which we believe will accomplish this result.

Members of the convention will pardon us for drawing upon our own experience somewhat for the illustration of what we here present. The practical working of the plan has thus been worked out. The fact is we were led to devise this profit sharing plan in order to get rid of the troublesome features of unionism. We whipped the union to a standstill—single handed—but it cost a pile. We do not regret this, for, as it eventuated, we have a better factory, a better and more efficient lot of employees and a very largely increased efficiency.

Co-operation a Dream from Time Immemorial.

Profit sharing between employer and employee is by no means a new proposal. The dream of the theorizer, idealist and industrial reformer from time immemorial has been co-operation.

The plan or system which we now briefly describe is, up to a point, co-operative, but it is, we believe, co-operation with all those features eliminated which have heretofore proved the bane of co-operative attempts. Perhaps the earliest record of an attempt at practical co-operation of labor and capital was when Laban proposed his apparently one-sided bargain to his shrewd prospective son-in-law, Jacob. In that particular case it worked quite well for Jacob, but not wholly to the satisfaction of Laban. The contract was not properly balanced. Too much was left to hazard. While Laban's flocks still increased, it happened after a term of years that Jacob had gotten away with much of the old gentleman's goods, some of his gold, his gods and all his girls. In this instance the rather avaricious Laban, the employer, in attempting to overreach Jacob, the employee, overreached himself. If the illustration proves anything pertinent to our subject it is that a sharp bargain driver like Laban may indeed have his eye opened by a sharper Jacob who knows how to peel the willow.

From that day until now it has been true, and by an inevitable law it always will be in the ultimate true, that the oppression of the hireling in his wages will work disaster and loss to the wage payer. We hold it true, as a simple business proposition, that as between employer and employee it pays to be just, fair and considerate. A prevailing condition of smiling peace and good will in any factory is in the long run worth at least 10 per cent. of the pay roll.

But how shall this be permanently secured? Can it be done by giving up to the union? Never. Can it be done by giving labor everything it asks? Never. Can it be done by making the factory a "charitable" institution? Never.

The Golden Rule Should Be Correctly Construed.

Men prate about applying the Golden Rule to the conduct of a factory. This is all right, provided a correct construction be placed upon that rule. Usually that rule is defined or interpreted to mean a species of socialism—that it means that the employer shall simply share up with his employees his earnings and profits.

The mere wage worker eventually loses his manhood and drifts into a feeling of childish dependence unless the tendency is counteracted. In its last analysis this tendency is what has given rise to unionism. We hold that it pays the employer in dollars and cents, to say nothing of any higher satisfaction, to give his employees every possible chance to rise. This was Mr. Carnegie's theory and it worked.

In attempts at profit sharing and co-operation there have been many failures, but always there were causes present which might have been avoided. But there have been enough notable successes to prove abundantly that the theory will fetch success if judiciously worked out. The main cause of failure at profit sharing has been in trying suddenly to make business managers out of carpenters, molders, machinists or blacksmiths without business skill or training. Successful business management is an art requiring long study, training and special skill, and wherever co-operation or profit sharing has been successful the business management has always been lodged with practical business men. The plan we here outline takes full note of this and we believe eliminates all this difficulty.

The Plan Adopted by the Author's Company.

Some years ago, as previously noted, the company we have the honor of representing adopted a combined savings deposit and profit sharing plan which is working to the complete satisfaction of all concerned. It is so simple, complete and self-sustaining and the benefits have been so pronounced that we venture to describe it. The conditions present were these:

1. A stock company managed by a regular board of competent directors.

2. Doing a fair business that was capable of some extension.

3. A small amount of treasury stock which could be issued from time to time, as desired, to workmen.

This given, about $10 was spent in printing blank certificates, and we were ready to introduce the system.

This certificate is the whole thing in a nutshell. It sets forth on its face that it is issued only and exclusively to employees of the company. It is ruled to provide for 20 or more entries, has blank spaces for the computation of earnings, withdrawals, cancellation and final receipt. The stub from which the certificate is detached remains in the book and has blanks for corresponding entries, and this comprises all the bookkeeping that is necessary to keep the system running. On the reverse side of the certificate all terms, conditions and limitations are clearly set forth. Briefly and mainly these are:

1. That the owner may withdraw the deposit at any time by giving due notice.

2. That if withdrawn before one month no interest will be paid.

3. If after one and before the expiration of four months, interest at 4 per cent. per annum will be paid.

4. If withdrawn after four months 6 per cent. will be paid.

5. After the expiration of six months, and if the owner so desires, the deposit shall become profit sharing, and for the time the money is in the hands of the company it will participate upon an exact equality with any other capital invested in the company; the company, however, guaranteeing that the profit shall in no case fall below 6 per cent.

6. That the amount of profit sharing certificates held by any employee at any one time shall be limited to $1000.

7. That the profit sharing certificate is, at the will of the holder, at any time after six months exchangeable for regular corporation stock.

8. That until so exchanged the owner shall have no voice or vote in the management of the company's affairs. But when so exchanged it becomes in all respects equal with the regular corporation stock.

9. That prior to exchange for regular corporation stock it is not transferrable except for purposes of immediate redemption.

10. That all interest or profits, as the case may be, shall be suspended during the existence of any strike in which the holder participates.

11. That the company arbitrarily reserves the right to redeem the certificate at the end of five years, or, in case of the death or disability of the owner, at the end of three years thereafter.

12. That the ownership of $50 or over of profit sharing stock, other things being equal, shall entitle the holder to preference of employment.

13. That the owner may add to his holdings, on any regular pay day, any amount he sees proper.

Not a Charity but a Business Proposition.

It will be observed that the plan provides for no so-called charities. It does not propose to offer something for nothing, but, on the other hand, it is a simple, straightforward business proposition. The interest allowed upon deposits is about what would be paid to the bank for borrowed money, and for the sake of encour-

* Read at the Cleveland meeting of the National Metal Trades Association, March, 1906. Mr. Downey is secretary of the Keystone Driller Company.

aging thrift and the cultivation of habits of economy the company can easily afford to favor its employees instead of the bank in this matter. The guarantee of a profit whose minimum shall be at least equal to the current rate of interest is only just while the depositor has no voice in management. So soon as an employee's certificate amounts to the limit ($1000) he may surrender and exchange it for regular corporation stock. He is then free to take out a new certificate.

The general effects of the system, as shown by its working, are briefly as follows:

1. It has established complete community of interest between the company and its employees upon a just and strictly commercial basis. Every workman who holds a certificate, large or small, considers that he is in a sense working for himself—he is in fact a proprietor, and this has its very far-reaching effect. It makes a man of him or tends to do so. He watches for leaks and lacks. He naturally frowns upon soldiering in himself and fellows. He cannot strike without hitting himself. The possession of the certificate naturally leads him to consider both sides of every labor dispute or difference which may come up. It makes him willing to arbitrate and discuss differences in a reasonable way. It leads him to feel (what is true) that the company is his friend, thus winning his good will—and good will, like good lubricating oil, is a splendid thing to have about a factory

2. It draws to the employ of the company and retains the most desirable class of workmen. A man who saves and practices economy for himself is, as a rule, a better workman than one who does not. The plan gradually weeds out and displaces the noisy floater and elects the improvident tramp and boomer to a further trip out the pike. With these undesirables kept out the danger of strikes or the need of lockouts is reduced to a minimum. It has been our experience that it completely eliminates the whole question of the troublesome features of unionism; the question of the closed or open shop; the walking delegate and all his kin. A noted labor leader has shrewdly observed that a stockholder makes a poor striker. The system was introduced during a prolonged strike in our factory that was as vicious as it was unreasonable. That strike is still on, so far as the company knows, and so far as it cares it may stay on for all time. The fairness of the company in thus "giving the workingman a chance" was the talk of the town.

3. There has been a very noticeable increase in the efficiency of the employees. This is in part due no doubt to the better (self-operative) selection of men that has resulted, but also from the cheerful enthusiasm with which the workmen take up their tools. The gain in this one particular alone pays all the interest on the savings deposits and all the profits accruing upon the profit sharing certificate twice over.

No Evil Effects from the System.

So far as noticeable there have been no evil effects whatever from the system, and the writer believes that, with modifications or limitations to adapt the system to the particular needs of any given factory, its general adoption would very largely eliminate the bitterness which is now so common between the man who furnishes the money and management and the men who furnish the muscle and mechanical skill.

At first the plan was regarded among the workmen with some suspicion and only a few of the more venturesome took it up. No attempt was made to force it upon the employees. The company simply proposed it and distributed a few sample copies of the blank certificate. Later on there was a move for the certificates and now all or nearly all the best workmen in the factory own certificates, to which they add more or less every pay day. Some have already reached the $1000 limit, have exchanged their profit sharing certificates for regular corporation stock certificates and have taken out new profit sharing ones. Up to date there has not been a single dispute, complaint or other disagreeable feature connected with the working of the sytem.

An objection to the plan which some might urge is that it makes public the profit earnings of the company. If these profits were excessive, it might be argued, the workmen might make it a reason for demanding unreasonable wages, &c. The answer to this is that, on the contrary, an exhibit of prosperity and good profits is an argument why every workman should take out a certificate and thus become a sharer in them.

We believe that the average workman is afflicted with the erroneous opinion that the employer makes 200 or 300 per cent. margin of profit instead of 5 or 10. He thinks the proprietor can at will take 20 dimes out of a dollar. As a stockholder he will learn that this is not true. As such he will have to admit the correctness of the annual report, and this will show him that the employing company dare not pay more than the market price for labor. The mere fact of concealment in such a matter works far more harm than an open statement of the exact facts. In a word, and speaking from experience, there is nothing in the objection.

The Metal Alloy Decision Accepted.

WASHINGTON, D. C., March 26, 1906.—The Attorney-General has rendered an opinion to the effect that there are no grounds upon which the Government can appeal from the recent decision of the United States Circuit Court of Appeals in favor of the William Cramp & Sons Ship & Engine Building Company, and involving the dutiable classification of a metal alloy composed of 62 per cent. iron, 32 per cent. tin and 6 per cent. manganese, used chiefly as a hardener in the manufacture of manganese bronze.

Duties were assessed on this importation as an alloy of aluminum under paragraph 172 of the act of July 24, 1897, at the rate of 8 cents per pound. Inasmuch as the alloy contained no aluminum the importers protested against the classification, claiming the merchandise to be a metallic mineral substance in a crude state, or a metal unwrought, dutiable at the rate of 20 per cent. under paragraph 183. The contention of the importers was sustained by the United States Circuit Court, but although the Government produced very little evidence in support of the claim that the merchandise was an alloy of aluminum it took the case to the United States Circuit Court of Appeals, which affirmed the court below.

The Treasury officials were disposed to ask for a writ of certiorari to the United States Supreme Court, but finally decided to refer the case to the Attorney-General for an opinion. That official has advised the department that there is no prospect that the Supreme Court will reverse the Court of Appeals and the collector at New York has therefore been authorized to forward to Washington the usual certified statement for refund of the excessive duties exacted by the customs officials. It is understood that a number of importations have been liquidated on the basis of the original classification by the collector; hence refunds will amount to a considerable sum. W. L. C.

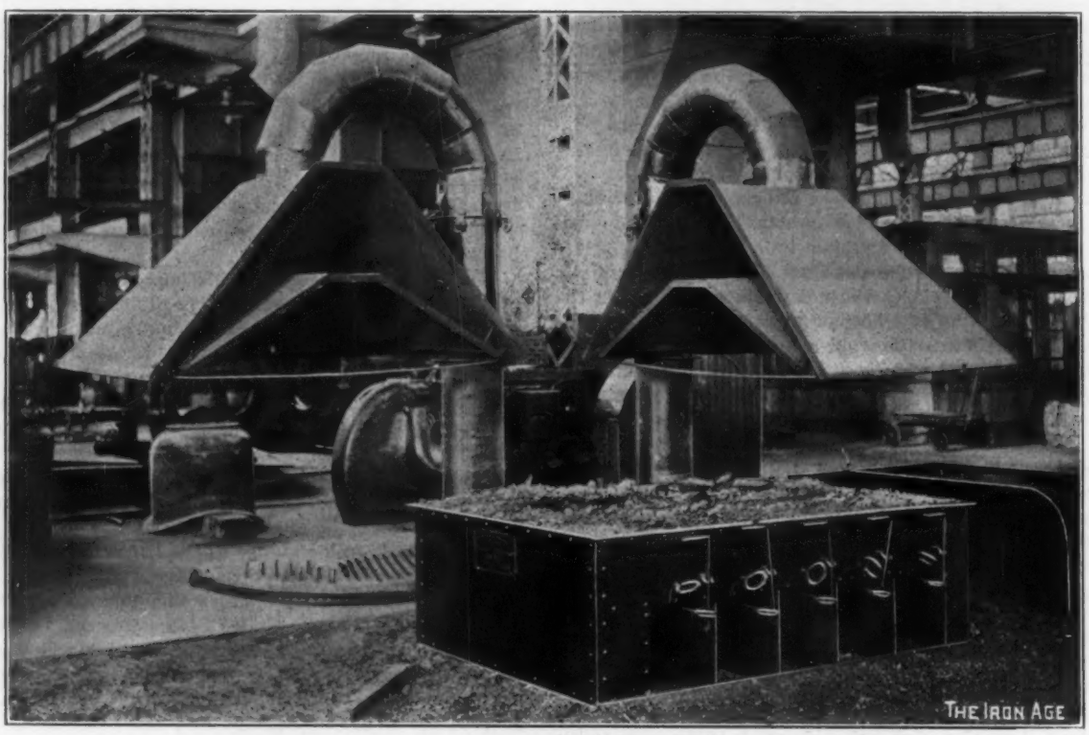
Thoughtful consideration for the convenience of purchasing agents is shown in the price list of Tuxeda bronze unions, made by Franklin Williams, 39A Cortlandt street, New York. It is printed on a standard size 3 x 5 inch card, to be inserted in a card index, and is easily adapted to whatever sort of holding device may be in use. The card gives, in addition to the price list, roughed and polished, and the discount and f.o.b. terms, a specification and short description of the Tuxeda union. Tabs at the top read "Tuxeda," "Bronze," "Unions," and either one of them may be left and the others cut off, according to the part of the index in which the user would place the card. The idea is a good one, and if a standard practice were adopted along the same line by all manufacturers it would probably be gratifying to those whose business it is to buy.

A patent has been granted to Ferdinand E. Canda, New York, on a process of combining titanium with other metals, and the patent has been assigned to the Chrome Steel Works, Chrome, N. J. The process consists in brief in melting ferrotitanium by the action of an electric current and then adding this molten metal to steel as the latter is tapped out of the furnace.

A Large Buffalo Forge.

The view in the interior of the Lehigh Valley Railroad Company's forge shop at Sayre, Pa., shown in the accompanying half-tone, illustrates a recent addition in the shape of a large forge. The entire equipment of the shop includes a number of the standard forms of forges, but the one illustrated is a new design intended for extra large forging. A special fire for handling large work is one of the requirements of a locomotive repair shop. The usual forge is built up with a heavy fire, but a blast pressure of six or even eight ounces is not sufficient to heat any great area of metal at one time, and has been found to be a handicap.

Among the special forges which the Buffalo Forge Company, Buffalo, N. Y., has installed for railroad shops, this one is particularly interesting. It consists of a heavy box type base, fitted for an underground blast connection, and having five tuyeres in a row. The blast for each tuyere is separately controlled by a slide blast gate, manipulated by a lever shown in the illustration at the front of the forge. A section of the forge between 3 and 4 feet long may be put under blast at the same time if need be. This provision apparently solves a serious question for the master blacksmith, who, though he has every facility for handling heavy work, usually has no fire on which to get a long heat.



A Buffalo Forge for Heavy Work Installed in the Sayre Shops of the Lehigh Valley Railroad Company.

The hood has the usual canopy shape, but is made to part in the middle, swinging each way. As shown in the engraving, it is a false hood, which causes an intense draft around the edge of the canopy and allows no smoke to escape. The object of the swinging hood is to allow handling the work by cranes, and the two halves are swiveled on roller bearings so that they can be easily moved with one hand. By a goose-neck connection the gases are carried away through the down draft exhaust system, in which suction is maintained by a fan.

The equipment of the Sayre shops also includes over 100 of the Buffalo railroad forges, with several distinct down draft systems having motor driven blast and exhaust fans. The Buffalo Forge Company installed these forges complete, as well as the forced draft apparatus for the boiler plant and the fan system heating apparatus for the main locomotive shop.

Work is steadily proceeding on the Suez Canal with the idea of providing for a uniform depth of 31 feet. The navigable dimensions are now practically double what they were 20 years ago. In the southern section the bottom width is to be further increased from the present 102 feet to 128 feet. The curves are also being improved and a large station constructed in the small Bitter Lake. The water level width of the canal in the northern half is from 300 to 360 feet and in the southern half from 240 to 300 feet.

Alabama Iron Ore Investigation.

The iron ores of Alabama will receive the special attention of the United States Geological Survey during the coming field season. The work of investigation will be carried on under the direction of Edwin C. Eckel, who spent considerable time last year in northern Alabama, studying the iron ores in the district between Chattanooga and Attalla and Gadsden.

of Talladega will be investigated by Dr. P. S. Smith, a geologist who has lately become attached to the staff of the survey. Within the past few years a great deal of interest has been shown in the ores of this district. They are said to be magnetites of a very high grade, suitable for the production of Bessemer iron. A thorough investigation will be made and the results embodied in a complete report.

A study of the iron ores of the Birmingham district will be taken up about May 1 by Mr. Eckel. The district will be mapped in detail, and the origin of the ores carefully worked out. A report on the iron ores and the iron industry of the Birmingham district will probably be published before the close of the year.

The motor vehicle for business purposes is rapidly increasing in popularity and many users who started with five vehicles two years ago now have from 20 to 50. Experience in many lines of business is said to show that the motor is cheaper, surer and quicker. A large user of electric trucks gives the following comparison by the month:

Electric Motor Truck.		*Horse Truck.*	
Driver	$64	Two drivers	$64
Charging	30	Horse feed	40
Washing and repairs	10	Repairs, washing and harness	10
Total	$104	Total	$114

The F. N. Gardner Improved Double Disk Grinder.

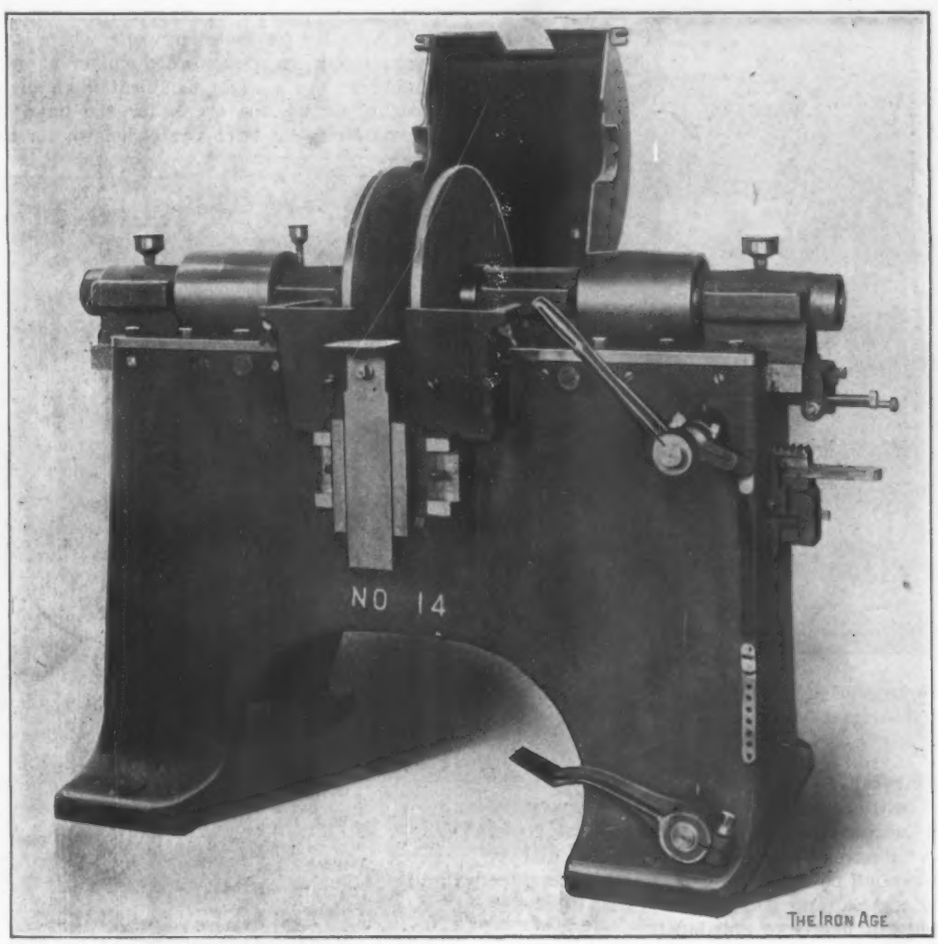
With respect to driving power and dimensions of spindle, wheels, &c., the No. 14 double head disk grinder illustrated is similar to the No. 4 grinder built by the Gardner Machine Company, Beloit, Wis., and described in *The Iron Age* November 2, 1905. The main difference is in the arrangement of the wheels, which in the new machine are placed with their working faces toward one another so that they may operate simultaneously on one piece of work. The wheels are 26 inches in diameter x ¾ inch thick; spindles, 2 inches in diameter; wheel collars, 5 inches x 1¼ inches, and spindle pulleys, 7 inches diameter x 3½ inches face. The wheels have a movement from contact with one another to a maximum distance apart of 14 inches.

The heads carrying the wheels are moved to and from each other by a hand lever or a foot lever, or by both. Both levers can be clamped in any position. The hand lever shaft carries a gear which engages at the top with a rack attached to the right-hand head, and at the bottom with a rack which is fastened to a bar hinged to the left-hand head. Working the lever moves the heads to and from each other. The lower rack can be dropped out of mesh and the left-hand head locked in any position required, so that the right-hand head may be moved independently.

It is sometimes desirable to move both heads separately, as when the opposite sides of the work are not of equal area, or when it is necessary to grind more off from one side than from the other. In the latter case the work is secured in a holder and the rest so adjusted that the right amount may be ground off either side independently of the other. The wheels can be drawn apart by a spring, which is attached to an adjustable lever. This enables the operator to use the foot lever alone and devote both hands to handling the work. Ordinarily the work is supported on a rest that is adjustable vertically and parallel with the wheel spindles. To prevent the wheels from moving back too far there is a back stop, and a screw stop regulates the forward movement of the wheels. The foot lever is connected wtih the rack gear shaft by sprockets and chain, the chain being adjustable to take up back lash.

The wheels are closely covered with a cast iron hood, the top half of which is hinged at the back and locked at the front with hinged bolts and thumb nuts. The opening at the front, with the cover closed, is 8 x 12 inches. Adjustable sheet metal shields are attached to the hood with thumb screws, and by shifting these the opening can be reduced to any size required. At the back of machine there is a flanged opening from the bottom of the gap in the bed for connecting an exhaust pipe.

The levers are of malleable iron, and racks, gears and sprockets are steel. The machine is equipped with the usual grease cups, oiling devices, setting up press, countershaft, wrenches, &c. Its net weight is about 3500 pounds.



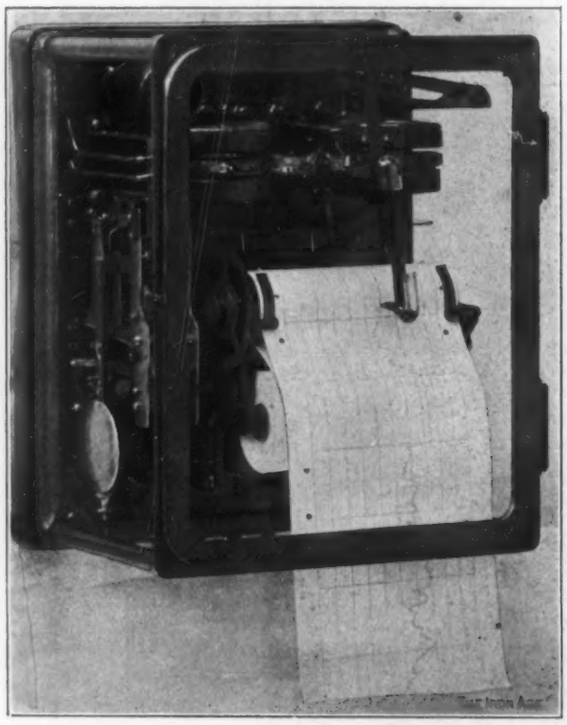
The No. 14 Improved Double Head Disk Grinder, Built by the Gardner Machine Company, Beloit, Wis.

Brazil Re-establishes Customs Rates.—Mr. Richardson, Chargé d'Affaires at Petropolis, reports that the reduction of 20 per cent. allowed under the former tariff law of Brazil has been re-established on the following imports from the United States: Manufactures of rubber, dyes, varnishes, clocks, condensed milk, wind mills, air motors, electric machinery, firearms, carriages and buggies, drugs and druggist supplies, glassware (the fair grades), hardware, launches, yachts, dredges, lubricating oils, medicinal preparations, paper and manufactures thereof, pianos, railroad material, scales, surgical instruments and appliances, toilet soap, typewriters, preserved fruits, Portland cement, manufactures of iron and steel, apples, men's ready made clothes, suitings, &c., and cutlery.

The New Westinghouse Recording Electric Instruments.

For switchboard mounting the Westinghouse Electric & Manufacturing Company, Pittsburgh, Pa., has brought out a new line of recording electric instruments, giving a continuous graphical log of the readings usually obtained from switchboard indicating instruments. These instruments are arranged to operate on the relay principle, the meter element actuating contacts which, in turn, energize a pair of solenoids arranged to move the pen. They are inclosed in glass cases 13 x 16 x 9 inches, with a removable high glass front giving access to the interior.

The alternating current ammeter, voltmeter and watt-



One of the New Graphic Recording Electric Instruments Made by the Westinghouse Electric & Mfg. Company.

meter coils are arranged in a manner similar to those of the precision instruments made by the company. The registering is independent of frequency, external fields, temperature, voltage or wave form variation, and is equally correct on all power factors. The wattmeters are made for single phase and polyphase circuits, the latter being correct at any degree of unbalancing..

The power factor and frequency meters have coils operating in the same manner as the corresponding Westinghouse indicating meters. The direct current ammeters operate from shunts, avoiding the heavy wiring usually necessary for mounting on switchboards. Shunts already installed for indicating meters may also be used to operate these meters.

The record is made by a special reservoir pen, which is moved in a straight horizontal line across the paper, its motion being proportional to the quantity to be measured, thus giving a scale having rectangular co-ordinates. The reservoir contains a month's supply of the ordinary writing fluid used. The quickness of the pen's motion, and consequently its sensitiveness, may be regulated so that a record may be made to follow the slightest variation of the load, or to slur these slight irregularities and form a more even line, representing a mean reading. The registering paper may be driven at speeds varying from 2 to 8 inches per hour, and is drawn from a continuous roll. The speed may be changed by inserting an extra set of gear wheels, 2 inches per hour being the standard speed regularly provided.

The recording paper is printed, ruled and punched, the width being approximately 6 inches—a deflection of 5¼ inches representing full load. The paper is furnished in rolls of sufficient length to last two months at the rate of 2 inches per hour. The clock is a self winding, high power design and requires no attention. The meter coils are claimed to consume no more energy than other Westinghouse switchboard instruments, and insure correct ratio on the meter transformer. The solenoids are energized from a separate source of current to relieve the meter transformers of the power required, and are of sufficient torque to render the friction between the paper and pen negligible.

An Improved Fox Miller.

In many respects the No. 3½ milling machine, made by the Fox Machine Company, Grand Rapids, Mich., does not differ from the No. 3 machine formerly made by that company. There are, however, a few changes, some of which have helped to increase its range of work, making it desirable for toolroom work, where it may be used to supplement an overcrowded universal miller. Among the changes are a slight modification in the speed mechanism, by which the crank for the hand rack feed is thrown over to the left; a ratchet lever for the hand feed

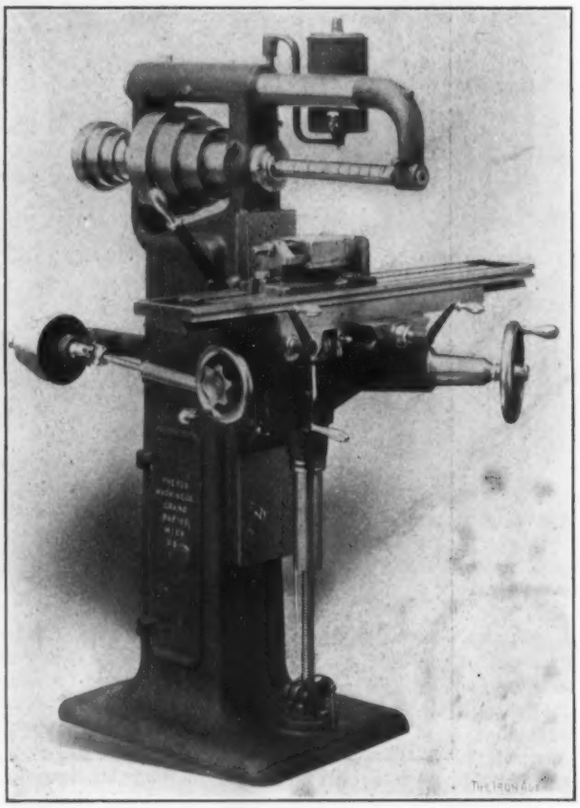


Fig. 1.—The No. 3½ Hand and Power Miller Made by the Fox Machine Company, Grand Rapids, Mich.

in place of the ordinary lever formerly used, and a new form of spindle construction radically different from the older one and better designed. The latter in many respects is the most important improvement in the machine, as it has reduced the tendency to wear and makes the preservation of the alignment more certain.

The general appearance of the machine is shown in Fig. 1. The feed is transmitted from the usual universal joint through three spur gears, one on each side of a central driver. These two gears each actuate a worm, one right and one left hand, which in turn operate separate driving cones, either one of which may engage by friction the main platen driving worm to feed the table in the desired direction. Giving the small star wheel at the center of the larger hand wheel a turn to the right or left starts the feed in the desired direction. Stopping at a central point leaves the main driving worm disen-

gaged when the hand wheel may be used for slow hand feeding. This whole feeding device may be tripped out of action and the feed accomplished through the hand rack feed by using either the crank or the lever. The lever is of an improved ratchet type, which allows a continuous cut to be made the full movement of the table without resetting the lever, and provides for setting it quickly in the most convenient position.

The spindle is of crucible steel, and has a 9-16-inch hole through it, with a No. 9 B. & S. taper socket at the end. The spindle bearings are ground and run in hard bronze boxes. The boxes are independently adjustable, and the steel collars for adjusting them have only to locate their position. The driving cone is fitted tight to the spindle, and sustains the end thrust against the rear taper bushing, which is practically a part of the main column, so that the thrust is not borne by the bearings themselves. The construction also obviates any necessity for removing the customary washer at the nose of the spindle and turning it down in order to adjust the front box. An enclosed felt washer at the nose protects the bearing from dust and grit which might be floated into the bearing by the oil used. The spindle construction allows the machine to be run in either direction. The differential back gearing, when desired, is placed inside the main cone pulley. This arrangement is compact, convenient and strong, and there are no additional gears exposed. The ratio is 4 to 1.

In this machine the saddle bearing is longer than in many heavy milling machines, being practically the same length as the travel of the table, which contributes to rigidity, as does also the long knee bearing. The latter is extended upward to a point nearly level with the top of the table. The vertical adjustment of the knee is effected by a hand wheel rotary nut and stationary screw, so that no hole is necessary in the floor. The machine is regularly furnished with an overhanging arm, a 4-inch milling machine vise, a two-speed friction clutch countershaft, cranks, levers, wrenches, &c., and a ⅞-inch arbor. The principal dimensions are as follows:

Longitudinal automatic feed in either direction, inches	24
Transverse movement, inches	6
Vertical movement, inches	14¼
Working surface of table, inches	6 x 30
Center of spindle to overhanging arm, inches	4½
Number of regular spindle speeds	8 — (84 to 425)
Number of spindle speeds, back geared	16 — (21 to 425)
Feeds per revolution of spindle	6 — (0.003 to 0.014)
Net weight of the machine, pounds	855

Fig. 2 is an illustration of a new vertical milling attachment made by the same company and adaptable to this or any of the millers. One of its novel features is that it provides for adjustment transversely; that is, in a line with the main spindle. The attachment will swivel to an arc of 90 degrees; or from vertical to horizontal, and by reversing it upon the spindle and overhanging arm, it will swivel between vertical and horizontal on the other side, so that it may be operated to cover a full 180 degrees. A graduated dial provides for conveniently setting it at any angle. The spindle is extra heavy, and is provided with draw-in collets and mills. The taper hole in the spindle is adapted to receive a No. 7 B. & S. taper shank, and there is a hole through the entire length of the spindle ½ inch in diameter. The bearings are large, and a convenient means of taking up wear is provided. Contrary to the usual conditions, this vertical attachment is so rigid that its efficiency is claimed to be just as great in a vertical miller as it is in a horizontal machine.

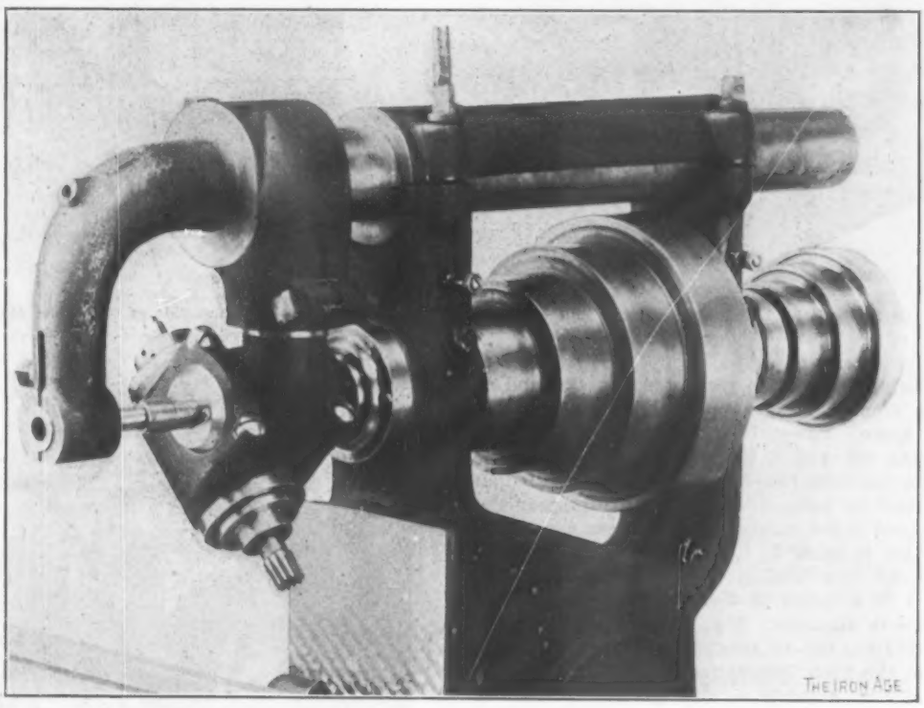


Fig. 2.—The No. 1 Vertical Milling Attachment Made by the Fox Machine Company.

The N. & G. Taylor Company's Steel Plant.—The light billet mill of the N. & G. Taylor Company's plant at Cumberland, Md., has been started up in full, rolling 1½, 1¾, 2, 2½, 3 and 3½ inch square billets. Heavier sections have not been attempted, as the output of the mill is being taken readily in these lighter sizes. An improved type of double continuous heating furnace, just installed, is giving remarkable results in speed and uniformity of heating, the capacity of the mill having been increased considerably by this change alone. The company is rolling an extra fine quality of basic open hearth steel, made in its own furnaces at Cumberland.

Plans are under way for consolidating the architectural and structural iron works of Anne & Thomas and the works of the Thomas A. Anderson Engine & Machine Company, both of Lancaster, Pa. It is proposed to merge the two companies into a new company, to be known as the Lancaster Machine & Structural Works, which is to be incorporated with a capital stock of $350,000.

It is expected that the new structural mill of the Jones & Laughlin Steel Company, Pittsburgh, Pa., will be started shortly. The output will depend on the available steel supply.

The Loew Victor Pipe Machine.

The service required of a pipe threading machine makes it desirable that it have two rather antagonistic qualities—strength and lightness—the latter that it may be conveniently portable. The machine illustrated, known as the Loew Victor pipe machine, and made by the Loew Mfg. Company, Cleveland, Ohio, claims to have satisfactorily compromised on these two points. It is solidly constructed, being designed to resist rough usage, and as may be seen from the engraving, occupies a comparatively small space. Power is transmitted by a double-lead worm gear, set close to the base of the machine, the worm gear having been found to be more powerful than bevel gears, and by using a double-lead worm gear the speed maintained is the same as if bevel gears were used.

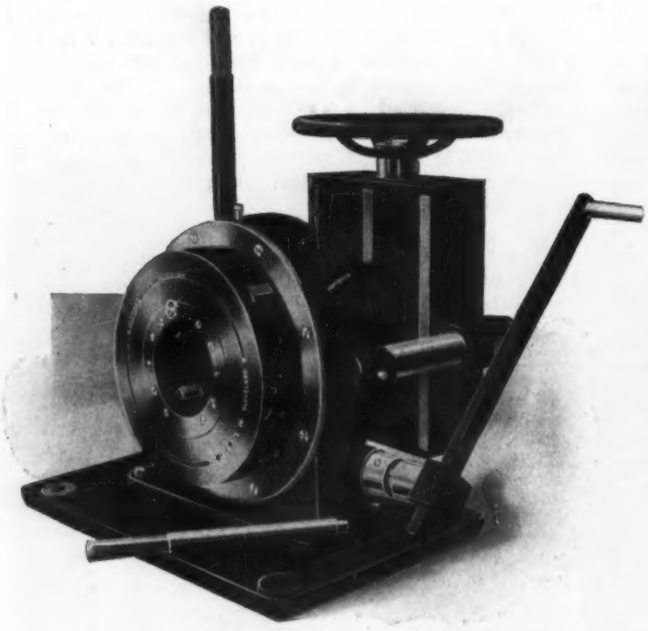


Fig. 1.—The Die Side of the No. 1 Loew Victor Pipe Machine.

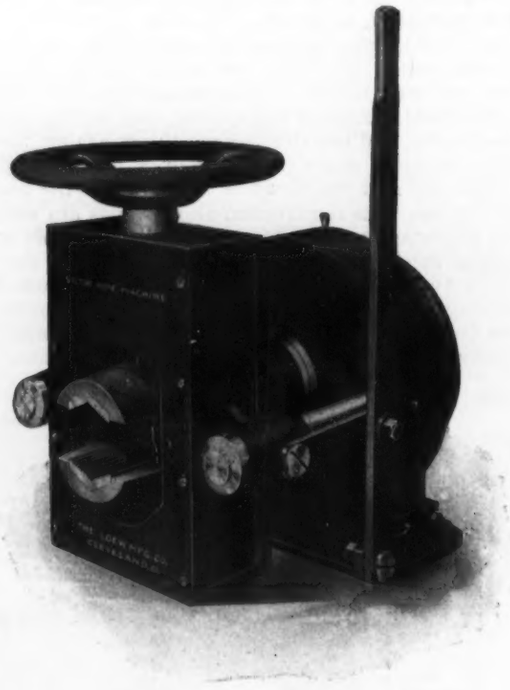


Fig. 2.—The Vise Side of the Same Machine.

The machine is made in three sizes, No. 1 being intended to thread pipe from ¼ to 2 inches in diameter; No. 2, from 1 to 4 inches in diameter, and No. 3, from 1½ to 6 inches in diameter. Fig. 1 shows a view of the No. 1 machine from the die side; Fig. 2 shows the same machine from the rear, illustrating the vise for holding the pipe, and Fig. 3 shows a view of one of the two larger sizes, which are equipped with two outside gear wheels, encased in a guard, giving the machine two speeds; high speed for the smaller sizes of pipe and low speed for the larger sizes. When it is desired to drive the machine by power instead of by hand a direct connected three-step pulley and shaft are furnished, and a countershaft carrying a three-step pulley.

The dies, which consist of four pieces, are made of high grade die steel, and when dull can be reground by any one. This is a great advantage, as it saves the time required to return them to the factory. The grinding does not change the shape of the cutting face of the die.

Another important feature in connection with the dies is that during the operation of cutting the thread the pressure of the pipe against them prevents all danger of their slipping. Usually it is necessary to employ some device to lock the head, to prevent the die from slipping after the threading begins. No levers or locking devices are used on the head, and there are no projections on the face plate. The face plate adjusts the dies, which engage in a continuous scroll on the back of the plate. The plate is self-locking, requiring no bolts to lock the dies when adjusted to the desired size. Each machine is supplied with an oil can and a tripod for supporting.

The vise is a universal, self-centering vise, with two long bearing jaws made of tool steel. The pipe is clamped in the vise by a hand wheel which is large enough to insure the pipe being held perfectly rigid in the jaws when set. To assist in setting the dies there are graduations on the face plate. The dies are set by inserting a small hand bar on the edge of the face plate, shifting it backward or forward as necessary. When the pipe is placed in the machine and the size has been adjusted and the vise jaws clamped, the operation is started by drawing the hand lever toward the front of the machine and revolving the head by means of the hand crank. After the pipe is started into the dies it continues to feed itself automatically. After the thread has been cut the dies are released by inserting the bar into one of the holes in the edge of the face plate and opening it slowly. This takes off the burrs of the thread. The quick opening feature obviates the necessity of reversing the machine and backing the pipe out of the dies.

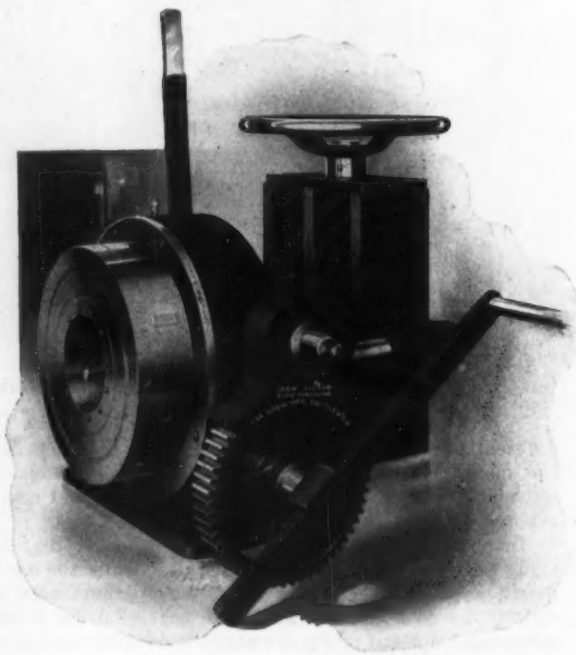
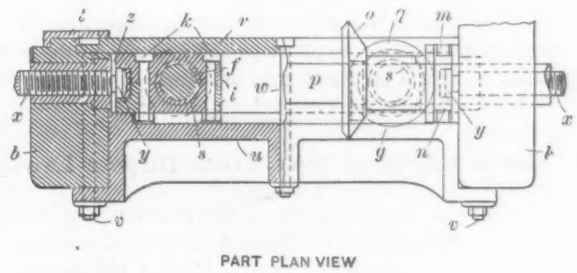


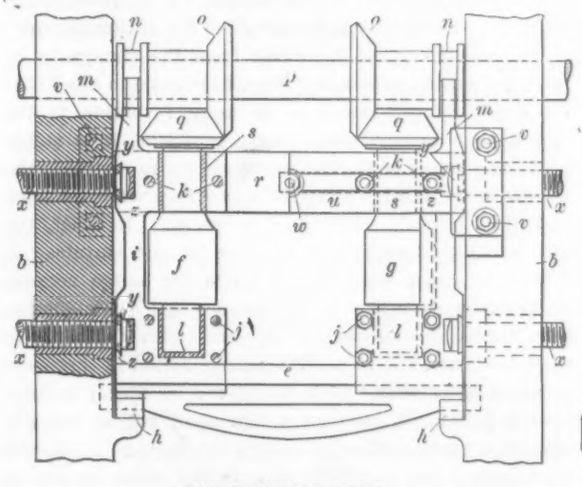
Fig. 3.—A Larger Machine with Which a Gear Reduction May Be Used When Cutting Large Pipe.

The Gardner Universal Mill.

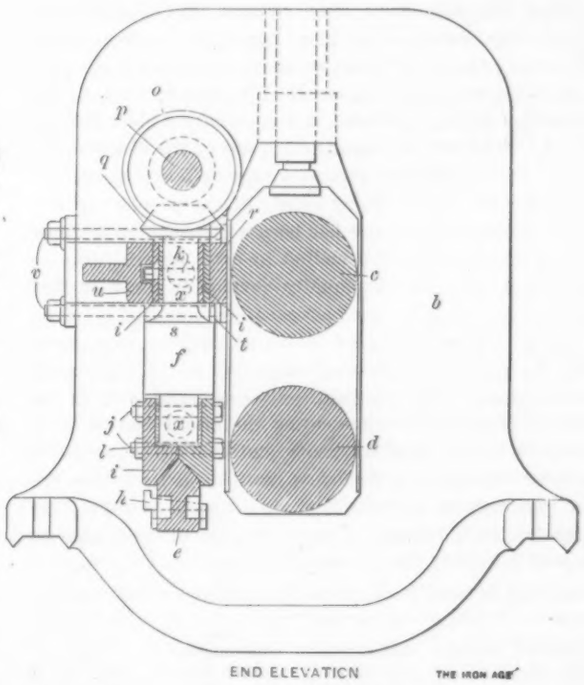
A universal mill, recently designed by K. C. Gardner of the United Engineering & Foundry Company, Pittsburgh, Pa., has two special features that are new to such machines. It is so constructed that the vertical rolls may be brought nearer the horizontal rolls than formerly, and that the vertical rolls may be removed without removing their driving shaft and lifting them vertically. The first mill of this type, as announced a few weeks ago, has been ordered by the Illinois Steel Company, Chicago, and is now under construction. It is interesting to know that the mill will probably be driven by an electric motor, although a definite decision has not yet been reached. If electric drive is attempted a motor of from 6000 to 8000 horse-power will be required, and the mill will be the largest that was ever driven electrically.



PART PLAN VIEW



PART FRONT ELEVATION



END ELEVATION

Details of the New Universal Mill Designed by K. C. Gardner and Built by the United Engineering & Foundry Company, Pittsburgh, Pa.

The accompanying illustrations show a part front elevation, part plan view and an end elevation of the new mill. In the drawing *b* is the end housing and supports the horizontal rolls *c* and *d*. At one side of these rolls is the lower rest bar *e* for the vertical rolls *f* and *g*, which has a V-shaped or angular upper edge, and is secured between the housings by keys *h*. Each of the vertical rolls *f* and *g* is supported in bearings in an individual frame, *i*. Each of these frames is made in two halves split in line with the axis of the vertical roll, the halves being secured together by the lower bolts *j* and the upper bolts *k*. The lower portion of this split frame is recessed to fit upon the rest bar, and contains the step bearing for the roll *f*. This step bearing is provided with a removable bottom liner, *l*, to assist in removing the roll. The upper part of the frame *i* has a forked part, *m*, to engage the grooved sleeve *n* formed on the projecting hub of the driving bevel gear *o*, which is splined on the driving shaft *p*. The gear *o* meshes with the bevel gear *q*, which is secured to the upper end of the vertical roll.

To hold the upper portions of the vertical roll frames in proper position and allow them to be brought close to the horizontal rolls, an inner bar, *r*, is provided, which extends back of the upper bearings *s* of the vertical rolls, and is set in recesses in the end windows of the housings inside the vertically extending liners *t*. There is also provided an outer clamping frame, *u*, which extends across the front of the upper bearings *s*, and is removably secured by through bolts, *v*. These through bolts extend through the frame *u*, the housings and the bar *r*, their heads being recessed within the vertical liners *t*. The frame *u* is also connected to the bar *r* by the intermediate bolt *w* between the vertical rolls. The vertical rolls are adjusted by screws, *x*, extending through the end housings, and having heads, *y*, secured by dovetailed slides, *z*, in the frame *i*.

In removing the vertical rolls the frame *u* is unbolted, the front halves of the vertical roll frames are unbolted, the bottom liners *l* are pulled out to disengage the gears *o* and *q*, and the roll may then be tipped forward and drawn out without removing the upper driving shaft. During the adjusting of the vertical rolls the upper securing bolts *k* for the roll frames move within a recess in the front clamping bar *u*.

The advantages of this construction are mainly in the simplicity of the device, the bringing of the vertical rolls close to the horizontal rolls and the ease in removing and replacing the vertical rolls.

The Great Lakes Towing Company has given a contract for a tug which will be a combination ice crusher and fire tug, besides doing the ordinary work of towing. It will be 76 feet on the keel, 17 feet beam and 7 feet depth of hold. For service as a fire boat the tug will have a pump capable of supplying 5000 gallons a minute and will be equipped with four hose lines and a standpipe. The tug will be in service at various lake towns, and along the docks its fire extinguishing equipment may often be of use.

A patent has been granted to Walter Brinton, High Bridge, N. J., on a cast manganese steel rail, and it has been assigned to the Taylor Iron & Steel Company. The process consists in casting the rail in the form in which it is to be used and then toughening it. The cooling of the rail after solidification is checked. Later heat is applied, and when the rail has reached a predetermined temperature it is plunged into cold water.

THE IRON AGE

1855—1906.

New York, Thursday, March 29, 1906.

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The Use of Scrap at Basic Steel Works.

One of the most obvious suggestions from the latest developments in the manufacture of open hearth steel is the increasing independence of the scrap market obtained by leading producers. It is not so long ago that it was a common observation that the gap between the cost of open hearth and of Bessemer steels was likely to widen because of the demand the rapidly increasing number of basic open hearth furnaces would make upon the country's scrap supply. But time has gone on and the scrap market has not shown that gradual appreciation that might have been expected in a time of strong demand for all forms of iron and steel products, while the basic open hearth process has been especially distinguished by an expansion without parallel in the country's steel making history. The larger proportionate use of the direct metal and of the pig and ore processes may be taken to account in large part for the going astray of the prophecies of a scrap famine. That there has been a large actual increase in the tonnage of scrap melted in open hearth furnaces is obvious enough; but equally obvious is the fact that as our steel output has increased the amount of scrap made by the mills has advanced at least by even pace. But the proportion of scrap employed in the basic open hearth process has declined, as would appear from the figures given below, representing the production of basic pig iron in the past six years and the output of basic open hearth ingots in the same years. Basic castings are not included, as the object of the table is to reflect the situation as it relates to the producers of steel able to employ the direct metal process:

Production of Basic Pig Iron and of Basic Open Hearth Steel.—Gross Tons.

Year.	Basic pig.	Basic steel ingots.	Ratio.
1900	1,072,376	2,502,447	43 to 100
1901	1,448,850	3,524,052	41 to 100
1902	2,038,590	4,384,129	46 to 100
1903	2,040,726	4,600,034	44 to 100
1904	2,483,104	5,007,448	49.6 to 100
1905	4,105,179	7,609,569	54 to 100

Being self contained to the extent that they buy neither ore nor coke and only occasionally go to the merchant furnaces to make up their deficiency of pig iron, it was not to be expected that the large producers of basic steel would remain subject to the vicissitudes of the scrap market. A great stride toward such independence was taken in bringing together scores of steel works and finishing mills into one organization, so that it became possible for the United States Steel Corporation's basic works to secure all the scrap they needed from connected plants. This made the situation as to the floating supply of scrap, which was all the time increasing, just that much better for the new basic works dependent on the general market. Then, as intimated above, the percentage of scrap needed at large works has been steadily lessened by the introduction of the continuous process with its high percentage of molten metal charge.

As to the commercial phases of the question, these are not alone the unwillingness of owners of ore and coal and limestone to pay a merchant's profit on any part of their raw material. The old material trade itself, essentially a trading and not a manufacturing proposition, furnishes reasons why large producing interests should be independent of it. There are so many links in the chain of supply and the fluctuations are such, due to weather conditions, to the possible manipulations which may upset the relations between supply and demand, and to other causes, that a steel company selling its products on contracts often running a year ahead must contrive to reduce its connection with the old material trade to the finest minimum. If steel making stock must be purchased it can be readily understood that to buy and secure the delivery at the stipulated times of 100,000 tons of pig iron would often be a less formidable proposition to a steel company than the effort to buy and secure the stipulated deliveries on 10,000 tons of scrap.

England Aroused Over Trade Dispute Laws.

Following the submitting of the report of the Royal Commission on Trades Disputes, a synopsis of which appeared in these columns recently, comes a bill presented to the British House of Commons by the labor interests, which is arousing a storm of opposition from employers of labor. Apparently the purpose of the proposed legislation is to meet those portions of the Royal Commission's report which are not favorable from the standpoint of the labor unions, although it should be borne in mind that the report is considered to be more favorable to the unions than to employers. As a preamble, it is stated that "the object of the bill is completely to restore trade unions to the legal position in which they were intended and until recently understood to stand." In brief, the bill provides four radical changes in the statutes: 1, "That a person shall not be liable for action because he has done an action in furtherance and contemplation of a trades dispute which interferes with another person's business;" 2, to make legal the action of any combination of persons which would not be illegal if done by one person; 3, that an action shall not be brought against a trades union or against any person or persons representing the members of a trades union in his or their representative capacity; and, 4, regarding picketing, that it shall be lawful for members to attend at a man's house to persuade him not to work. A more sweeping measure in its effect upon the liability of labor unions and their members for civil action for damages could hardly have been framed.

The first clause apparently is intended to apply regardless of contracts which may exist between employer and employee, the matter of contract forming an important element in existing precedents concerning the liability of labor unions and their members for civil action for damages. In the second instance the courts have established the law as meaning that while the act of an individual may be harmless and easily withstood the same action by a combination of men may become intolerable and may be made the ground for damages. The bill in question would legalize any act of any combination which would be legal if done by one person. The third clause of the proposed act would nullify the Taff-Vale decision, which may be termed the foundation of the principles which are essential in the maintenance of actions for damages against unions, at any rate more essential than any other decision of the British Courts; and it would also vitiate a previous decision which held that a few of the members of a union may be singled out and sued as representatives of the

whole body. The *Engineer*, in discussing the vital changes as proposed, says: "It is appalling to think of what might obtain if this ominous paragraph were to become part of an act of Parliament. A group of union officials, whether representing the union or not, might harrass an employer until his business was ruined; hound so-called black-legs (strike-breakers) out of a district; publish libels—in furtherance of a trade dispute,— and even commit acts of violence without making the union funds responsible, or being responsible in a representative capacity."

The act probably would not vitiate the criminal laws, but is aimed to place labor unions in a more advantageous position as to liability for money damages. It is a well known fact that the position of the employer of labor has become much stronger in trades disputes, in this country as well as in England, since it has been established in the civil courts that unions and their members are liable for damages as a result of conspiracy or for damages wrought in other ways. As in the Danbury, Conn., cases, where every member of the local hatters' union had his property, real estate and bank accounts attached for damages, it has been proved that a civil action against the many is more potent as a means of preserving the legal rights of the employers than criminal proceedings against a few. The bill before the House of Commons, if made a statute, would doubtless have material effect on the powers of the courts in issuing injunctions. It would mean threshing out again the whole subject of liability of labor unions and their officers and members. It is doubtful if it ever becomes a law. We should judge it highly improbable. But the bill is indicative of the temper of the British labor leaders and of their dissatisfaction with the report of the Royal Commission, which really seems to be unpopular with both employers and workmen.

Capital and Small Industries.

The frequent complaint of recent years that capital is slow to invest in small established industries seems to have practically ceased. A very great number of such establishments are extending their resources and their manufacturing facilities, especially in metal lines. In the East, especially in the older manufacturing centers, investors had for a long time unfavorably regarded their home industries as producers of satisfactory dividends. It is difficult to explain why this has been so. The average return on the money invested in these industries has compared more than favorably with those of other equally safe investments. But the statements of the profits of such an establishment, showing successful business, has proved no allurement, because of lack of faith in the results of the same business conducted on a somewhat larger scale. Moneyed people have put their funds into the large industrial stocks, in some instances to their serious loss, yet have refused to go into a conservatively capitalized, well managed, strongly established business which time has proved to pay satisfactory dividends, even when general business conditions have not been wholly favorable. It is also true that in many instances the promoter of an absolutely new and untried business which was all on paper has succeeded in interesting capital which looked askance at the established industry, the reason probably being that the enthusiasm of the promoter encouraged hopes of exceptionally large returns on money invested, while the established manufacturer, basing his calculations on his books and his knowledge of the markets, intelligently estimated a conservative but sufficient return to those who bought the stock of his corporation. Another element in the shyness of investors has been the prejudice which was engendered against industrial stocks of all descriptions, not so much by the great combinations as by certain of the smaller so-called trusts which proved failures, to the serious loss of their shareholders. With the survival of the fittest this prejudice is passing away. The present prosperity has made itself felt. Dividends are large, investors have more money available, and they are listening to those who are seeking funds with which to enlarge legitimate manufacturing business.

Great Activity in Railroad Building.

That 1906 will make an unusual record in the construction of new railroad lines is indicated by information gathered by the *Railway Age* of Chicago. Not for years has the outlook been more favorable in this direction, and many of the lines under contract are of such length that construction work will probably extend over several years. The figures show that already 13,014 miles of new track are under contract or under construction. Last year at the same time the statistics of the same paper showed 7500 miles under contract, and its detailed statement of track laid in 1905, published last week, showed a total of 5000.25 miles. Applying the same ratio to the mileage now reported under contract would point to the actual construction of more than 8500 miles of new lines in 1906. The distribution of the new work is shown in the table below:

	Under contract or construction. Miles.	Live projects. Miles.
New England States	36	6
Middle States	398	229
South Atlantic States	1,462	801
Gulf and Mississippi Valley States	1,303	1,173
Central Northern States	869	851
Northwestern States	2,321	1,200
Southwestern States	3,488	2,624
Pacific States	3,137	1,549
Totals	13,014	8,433

In recent years the South and Southwest have furnished an important part of the new railroad construction, and activity in these sections is not waning; but the Northwestern and Pacific States are to have precedence for some time to come in view of the extensions projected by large systems traversing those States. The Chicago, Milwaukee & St. Paul's extension from Evarts, N. D., to Tacoma and Seattle, about 1500 miles, is chief of these important projects, 1000 miles being under contract. Other large mileages are those of the Western Pacific, Salt Lake City to San Francisco, 937 miles; the Denver, Northwestern & Pacific, 470 miles; the Hill lines, 784 miles under contract, and the Harriman lines, 546 miles actually under construction. The Chicago & Northwestern has 403 miles under construction, and the Kansas City, Mexico & Orient has yet to build 700 miles to get to the Mexican border. Of the 13,000 miles now under contract more than two-thirds are controlled by 38 companies. What should aid in a substantial increase in 1906 upon the track building record of 1905 is the exceptionally open winter. There may be some difficulty in getting all the labor needed for the programme of this year, but the rail mills can increase their output of 1905, though there may be difficulty about giving every buyer the deliveries he wants.

Canada, too, has large railroad building operations on hand, to which the mills of the United States will contribute at least 100,000 tons, the requirements being beyond the possible output of the two Canadian mills. For the Grand Trunk Pacific 1395 miles are now under contract.

If the ratio of 1905 holds out this year the new steam

railroad work now under contract in the United States will require the delivery of 1,100,000 to 1,200,000 tons of rails, counting an average of 90 pounds to the yard. Electric lines will take the largest tonnage ever known, estimated by good judges at 500,000 to 600,000 tons. It will no doubt be the greatest year in the history of the rail trade, for rails bought for renewals usually much exceed the requirements for new construction. As far as new lines go, only three years in the past 25 have exceeded the probable record for this year—1881 with 9779 miles, 1882 with 11,599 miles and 1887 with 12,984 miles. The average of the other 22 years is 4396 miles, or something over half the expected new mileage for 1906.

British Naval Innovations.

The announcement has been made by the First Lord of the British Admiralty that during the coming year four armored vessels and 17 destroyers will be built to be equipped with turbine machinery. The statement holds a peculiar interest in view of the controversy which has recently been waging between German and English manufacturers respectively interested in reciprocating engines and steam turbines relative to the value of turbines for the propulsion of vessels. The English navy represents a conservative element that would hardly make so radical a step without a firm conviction of its being justified. It may be a source of some pride that our own navy has finally decided to equip two or three of its new vessels with turbines. Another statement from the First Lord of the British Admiralty quite as striking is that oil installations are to be made on all new vessels and some of the older battle ships are to be refitted with oil burning apparatus. In view of the fact that America is one of the greatest producers of oil it is a little strange that our own Government did not precede the British Government in adopting this practice. A very thorough investigation of the advantages of oil for fuel was made under the direction of our Navy Department not long since, and the conclusions of the board making the inquiry and tests seemed to be favorable.

The Machinery Dealers Getting Together.

The work of the National Supply and Machinery Dealers' Association has begun to bring substantial results for its members and for other manufacturers through the local associations which are springing up in the larger cities. It has been demonstrated time and time again that where an association exists in any line of manufacture or trade the members are benefited. The local supply and machinery dealers' associations are no exceptions to the rule. Cutting prices had grown to be almost chronic in the lines they represent as the result of conditions which would never have existed had there been cooperation. The ideal condition in business is one in which everybody makes a fair profit, but competition between sellers who never confer with one another has too often placed important lines of trade on perilously low margins.

The Allegheny Steel Company's Improvements.—This company, whose offices are in the Farmers Bank Building, Pittsburgh, with open hearth steel plant, sheet and tin plate mills at Brackenridge, Pa., has recently enlarged one of its open hearth furnaces from 35 tons capacity to 50 tons and now has three 50-ton open hearth furnaces. It has also rebuilt its light plate mill to roll heavy plates and is now prepared to furnish plates up to ¾ inch thick and 72 inches wide. It has just bought 6 to 7 acres of ground adjoining its plant, which will be used for the building of two or three more 50-ton open hearth furnaces. The Interstate Steel Company, which is an identified interest of the Allegheny Steel Company and makes high grade sheets, has recently added another hot mill, giving it three hot mills and two cold mills. A specialty made by this company is velvet blue annealed sheets of very high quality for special purposes.

Conciliation in the Stove Industry.

The Department of Commerce and Labor, Washington, D. C., has issued *Bulletin* No. 62 of the Bureau of Labor, in which 73 pages are devoted to a most interesting article on "Conciliation in the Stove Industry," prepared by John P. Frey, editor of the *Iron Molders' Journal*, and Prof. John R. Commons. This article is largely of a historical character. The conditions are outlined which caused strikes and lockouts which at one time were so numerous in the stove trade and which culminated in 1887 in the greatest one in the history of the trade, known as the Bridge & Beach strike and lockout. The struggle in this case became of national proportions and was conducted on the employers' side by the Stove Founders' National Defense Association, which had been organized in 1886. Although the molders were defeated in their effort to secure a 10 per cent. advance in molding prices they claimed a victory because they considered that they had frustrated an attempt to destroy their entire organization. Other strikes occurred in the years immediately following until in 1891 a strike at Pittsburgh was settled by an agreement between the Defense Association and the local union which was satisfactory to both sides and made it quite plain that if an agreement could be made after a strike had been called and losses suffered it would be possible to make just as satisfactory an agreement before the strike. Consultations on this point had in fact been held between leading members of the Iron Molders' Union and the Defense Association immediately following the Bridge & Beach strike, but it was not until after the Pittsburgh strike in 1891 that an agreement was made to submit disputes to a conference committee composed of three representatives of each body. The relations thus established have been continued to the present time. Conferences are held annually in March at which rates of wages are fixed for the next working year, beginning April 1, and other questions are discussed over which there may be some differences of opinion. Since the first agreement was made in 1891 many differences have arisen which are referred to in this article, but in no case has any troublesome question come up which has not been settled without a conflict between the two organizations.

While differences of opinion exist, even in the stove trade, regarding the results derived from the establishment of such close working relations with the Iron Molders' Union it must be conceded that the facts as presented in this article constitute a very strong argument in favor of trade agreements of the character therein set forth. The authors of the article have certainly prepared a very able document and one which will doubtless be largely drawn upon hereafter in discussions of labor movements.

Improvement in the British Iron Market.—Advices from Great Britain are that the pig iron market, which weakened in the early part of March, has shown improvement in the past ten days. The change was most marked in the Cleveland district, Cleveland warrants, which had fallen to 47s. 5d., advancing until they reached 48s. 4d. on March 15. No. 3 Foundry sold on the same date at 49s. for prompt delivery. Stocks in warrant stores showed a decrease in the first half of March after many months of steady increase. Stocks reported by Connal & Co. in store on March 14 amounted to 741,914 tons, a decrease since March 1 of 5204 tons. A heavy increase in exports of pig iron from the Cleveland district is noted this month, and March is expected to make a record. The greatest month's total previously was 135,973 tons in June, 1890. Consumers of pig iron, who have been holding aloof from the market, are now buying quite freely.

The Shipping Bill Hearings.

WASHINGTON, D. C., March 27, 1906.—The House Committee on the Merchant Marine and Fisheries, which has before it the shipping bill, at a meeting on March 22 decided to hold a series of hearings on the measure, beginning April 4. These hearings will be held on consecutive days, and as it is believed that they will not extend over four or five sessions, it is thought the bill can be brought to a vote on or before April 15. The measure having passed the Senate it can easily be disposed of by the House before the adjournment, which will probably be taken about June 1, provided a majority can be found for it in committee and on the floor.

Interests to Be Heard.

The hearings before the committee will be of a somewhat special character. The shipbuilding and shipowning interests will not be represented unless the members of the committee shall indicate a desire to hear something further from these interests. The arguments heretofore presented by the representatives of these industries have been so full that the friends of the measure do not believe it necessary to submit anything further along these lines. Two important classes of manufacturers are expected to be heard, namely, those engaged in making steel plates and other steel and iron shipbuilding material, and a large contingent of producers in the Middle West who manufacture goods of various kinds for export and who have advised the friends of the bill that they regard it as a measure calculated to increase largely our present shipping facilities. Some of these manufacturers who have greatly enlarged their foreign trade in the last few years have been impressed with the position in which they would probably find themselves in case of an important foreign war which might interrupt the exportation of goods from the United States in vessels flying foreign flags. While this phase of the subject is not altogether new, it has naturally been much emphasized by the rapid increase in our exports of certain lines of goods.

The committee hopes to secure some interesting information from leading steel manufacturers with regard to the relative cost of shipbuilding materials in the United States and in Great Britain and Germany. It is understood that at least one prominent officer of the United States Steel Corporation has been invited to address the committee, and Secretary Marvin, of the Merchant Marine Commission, is in correspondence with various authorities from whom he hopes to secure recent and reliable data.

The friends of the bill resent very warmly the suggestion that a subvention to American shipowners in foreign trade would be "a subvention to the steel trust." The commission contends that the subventions provided by the bill were never intended to compensate for any such "indefensible discrimination as that practiced by the steel makers who asked American builders $32 a ton for ship plates, and laid them down for $24 a ton at Belfast." It is not the price of materials, it is asserted, or only that in relatively small part, which makes an American vessel cost more than a British vessel. The dominating factor is not the materials, but the wages of the skilled workmen who fashion the plates, beams, etc., into the finished structure. In this connection the case is cited of a cargo steamer with a capacity of 5000 tons, for the construction of which American and British yards competed against each other. There was a serious strike at that time in England, and because of this and other causes steel plates were selling there at $40.86 a ton, as compared with $28 in the United States. The materials for this ship would have cost the British builders $80,000; the American builders, $63,000. Yet, bidding against each other for the narrowest profit, the Americans offered an estimate of $275,000 and the British $214,000. The chief reason for this was that American shipyard mechanics receive wages very nearly twice as high as those of the British workmen.

The Cramp Ship & Engine Building Company, in figuring for the commission the cost of the steel plates and shapes in a 500-foot vessel, recently calculated that by purchasing 2890 tons of plates and shapes abroad a saving of $11,208 could be made in a total expenditure of about $900,000, showing that the difference in the cost of these items was only a little more than 1 per cent. of the total value of the vessel. The House committee will analyze these figures closely and will hope to supplement them by other data from American manufacturers.

Merchants' Association Will Oppose the Bill.

The committee has received notice that the Merchants' Association of New York will oppose the bill, but the friends of the measure claim that the dominating interest is that of certain foreign steamship lines represented in the association, and hence that the committee will not be greatly influenced by this opposition.

While the House committee was certainly not made up with a view to securing a favorable report on the shipping bill, if indeed the Speaker's well-known hostility to the measure is not reflected in its membership, yet the friends of the bill assert with much positiveness that it will be favorably reported by a narrow margin. The committee is composed of 6 Democrats and 12 Republicans. Five of the Democrats and three of the Republicans are believed to be against the bill, while one Democrat and nine Republicans are understood to favor it. The change of a single vote, therefore, might prevent the bill from leaving the committee. As far as the Speaker's attitude is concerned, the advocates of the bill believe that he will at least remain neutral, and they hope to present to him a petition for the consideration of the measure with a sufficient number of signatures to command favorable action. M. C.

Chairman Gary's Views on Business Prospects.

Chairman Elbert H. Gary of the United States Steel Corporation has been interviewed on the business situation, and is quoted as follows:

"From the standpoint of the iron and steel manufacturer the prospects for an unusually large business during the entire calendar year seem to be exceptionally bright. While the volume of sales is not so great at the present time as it has been for several months, for the reason particularly that manufacturers have oversold, yet the amount of unfinished orders heretofore taken is so large that it would be impossible to fill for at least 15 months the orders on hand and those to be taken.

"It will be seen, therefore, that there is no reason to expect a diminution in our lines of business in the near future unless it is occasioned by unforeseen circumstances, such as failure of crops or unreasonable political action. As to the former it seems to be probable there will be a good winter wheat crop; and no reason now exists to think other crops will not be good.

"Perhaps more danger is to be feared from possible unreasonable political action. At the present time the atmosphere seems to be charged with distrust and suspicion. This applies more or less to good and bad enterprises alike. Some justification is found in recent exposures for the sentiment referred to, but the feeling of apprehension undoubtedly has been exaggerated. On the whole, perhaps nothing but good will result.

"Every one in charge of great responsibilities should be stimulated to use greater efforts to promote what is good, and to prevent what is bad. On the other hand, it is a mistake to suppose that every important enterprise or combination is permeated with vice, and should be attacked by legislators, politicians, or the public press. There is a possibility of creating such a distrust as to frighten capital, which is always timid, to such an extent that business conditions may be seriously and adversely affected. Some of the recent utterances of President Roosevelt on this subject have been very forcible and eloquent, and it is to be hoped they may be widely published. On the whole, I believe those engaged in our lines of business, at least, are generally optimistic as to the future."

There will be no Founder's Day exercises held this year at Carnegie Institute, Pittsburgh. The large additions now being made will not be finished this year, and it has been decided to hold the exercises on April 11, 1907. Andrew Carnegie has promised to be present.

PERSONAL.

F. E. Junge and Prof. H. Diederichs of Sibley College, Cornell University, have associated themselves as consulting engineers, with headquarters at 150 Nassau street, New York. They propose to devote their attention exclusively to the subject of gas power, and have entered upon an agreement for mutual co-operation with Dr. Lucke of Columbia University.

H. Mather Brooks has resigned his position as New England salesman with the National Steel & Wire Company, New Haven, Conn., and will hereafter represent the Pittsburgh Steel Company in the same territory.

A new firm of consulting engineers has been formed by John C. Kafer, formerly vice-president and general manager of the Quintard Iron Works; Asa M. Mattice, formerly chief engineer connected with Westinghouse interests, and Benjamin H. Warren, formerly of the Yale & Towne Mfg. Company, of the Westinghouse interests and recently president of the Allis-Chalmers Company. All three have been with the Engineer Corps of the Navy. The new firm, which is styled Kafer, Mattice & Warren, has established offices at 60 Wall street, New York.

H. H. Campbell, metallurgical engineer of the Pennsylvania Steel Company, who only recently returned from Cuba, is reported to be ill.

Walter C. Allen has succeeded the late Frederick T. Towne as general superintendent of the Yale & Towne Mfg. Company, Stamford, Conn. Mr. Allen was Mr. Towne's assistant and has worked his way up from the position of truck boy, which he took with the company at the age of 14.

Bennett H. Brough, secretary of the Iron and Steel Institute, delivered an address March 15 before the West of Scotland Iron and Steel Institute on "The Early Use of Iron." The speaker summarized interestingly the existing knowledge of the metallurgy of iron and steel prior to the introduction of the blast furnace.

M. Flores Osmond, the eminent French metallurgist, has been awarded the Bessemer Medal for 1906 by the Council of the Iron and Steel Institute for his work on recalescence phenomena and in metallography.

Dr. Wm. B. Phillips, formerly connected with the University of Texas and having in charge the work of the Texas Mineral Survey, is now engaged in mining operations at Trilingua, Texas.

R. B. Coan has been appointed superintendent of the New England Steel Casting Company's plant at Hyde Park, Mass.

Thomas Pellow, for many years connected with the Jackson Iron Company's operations at Negaunee, Mich., has been made superintendent of the Interstate Iron Company's mines on the Mesaba range.

George F. Rummel, assistant general sales agent of the American Steel & Wire Company, Chicago, left this week for California, where he expects to remain during the month of April.

William Brown, for the past two years superintendent of the open hearth department of the Dominion Iron & Steel Company, Limited, Sydney, N. S., has tendered his resignation to become effective March 31, and will shortly thereafter return to the United States.

A London press dispatch dated March 24 states that, after an official inquiry, Percy Gilchrist was committed to an asylum for the insane. In collaboration with his cousin, Sidney Thomas, he invented the Thomas & Gilchrist or basic process of manufacturing steel.

Wm. G. Mather, president of the Cleveland Cliffs Iron Company, Cleveland, returned last week from a two months' trip to Germany and Scandinavia.

Charles A. Moore of Manning, Maxwell & Moore, New York, was elected chairman of the Welfare Department of the National Civic Federation at the annual meeting of the Executive Committee in New York this week. Mr. Moore succeeds H. H. Vreeland, who resigned. The officers of the Federation for the coming year are: August Belmont, president; Samuel Gompers, first vice-president; Oscar S. Straus, second vice-president; Seth Low, chairman of the Conciliation Department; Ralph M. Easley, chairman of the Executive Council, and Samuel B. Donnelly, secretary.

A. L. Strickland has resigned as chief engineer of the Republic Iron & Steel Company, Youngstown, Ohio.

A. McWhirter, secretary to C. W. Bray, president of the American Sheet & Tin Plate Company, Frick Building, Pittsburgh, has resigned, effective April 5, to become assistant to the president of the Newfoundland Syndicate, which position he will assume April 9. Mr. McWhirter has held his present position since July 1, 1901, prior to which he was claim agent and assistant in the operating department of the National Steel Company until it was taken over by the Carnegie Steel Company.

William Goodhue has been made general superintendent of the Aetna Standard Works of the American Sheet & Tin Plate Company, Bridgeport, Ohio, succeeding Harry L. Cooke, resigned.

James H. Nutt, Youngstown, Ohio, secretary of the recently organized Western Bar Iron Association, has returned from a trip among the mills belonging to the organization in Indiana. It is probable this association will hold a separate conference with the Amalgamated Association when the time comes to arrange the wage scales this year.

Various changes will take place on April 1 in the personnel of the Stanley-G. I. Electric Mfg. Company's representation on the Pacific Coast. F. V. T. Lee has resigned the position of district manager to become assistant to the president, John A. Brittin, of the Pacific Gas & Electric Company. H. C. Parker, who has been manager of the San Francisco office, will become acting district manager, and G. I. Kinney, who has been manager of the Seattle office, will be associated with Mr. Parker, with headquarters at San Francisco.

James M. Swank, general manager of the American Iron and Steel Association, has been seriously ill the past week, having undergone an operation at a Philadelphia hospital.

OBITUARY.

SAMUEL J. HENDY, president of the Joshua Hendy Machine Works, San Francisco, Cal., died March 14, aged 50 years. He was a native of South Carolina, but had been a resident of San Francisco since 1872. He was a nephew of the founder of the company, succeeding his uncle as president upon the demise of the latter in 1893. Samuel Hendy was also one of the most prominent mining men in the West. He owned extensive interests in California and Mexico and for many years was president of the California Miners' Association. He was further the owner of valuable fruit lands in the southern part of the State and devoted much of his time to the care and culture of fruits. He is survived by his widow and four children.

JAMES C. BEACH, who was treasurer of the Railway Steel Spring Company until March 1, died from pneumonia at Bloomfield, N. J., March 21, aged 79 years. He was a native of New Jersey, a graduate of Princeton, and his business career covered an early experience in banking, then in the manufacture of paper, next in an active interest in the Allen Paper Carwheel Company and finally in the connection above referred to. He was also a large stockholder in the Lappan Brakeshoe Company and vice-president of the Bloomfield Coal & Supply Company.

DAVIS B. KURTZ, New Castle, Pa., one of the leading corporation lawyers of western Pennsylvania, died March 21, in his eightieth year. He was vice-president of the National Bank of Lawrence County in New Castle and was connected with the New Castle & Beaver Valley Railroad when it was the only line entering New Castle. Through his connection with the National Bank of Lawrence County he had a leading part in the development of the iron industry of New Castle and of the entire Shenango Valley. One of his sons, Fritz Kurtz, is a professor in the School of Mines of Columbia University, New York City, and another, Charles M. Kurtz, is director of the Buffalo Art Galleries.

The Coal Conference.

(By Telegraph.)

INDIANAPOLIS, IND., March 27, 1906.—Just a week ago to-day the joint conference of the bituminous operators and miners referred their respective propositions to a joint Scale Committee. The conference was reconvened this afternoon to be notified that the committee had been unable to agree. The report of the committee was accepted, and John Mitchell moved that the scale of 1903 be restored. The afternoon was taken up in discussion, and an adjournment was had to 9 o'clock to-morrow morning. The Pennsylvania operators had expressed in the Scale Committee their willingness to pay 1903 wages, so that the fight against the Mitchell motion was made by Illinois, Indiana and Ohio operators.

The miners argued that if the Pittsburgh Coal Company could pay the increase not only in Pennsylvania but also in the mines of the company in Illinois and Ohio, other operators could afford to. The latter answered that if the miners would create the same conditions in Illinois, Indiana and Ohio as exist in Pennsylvania the advance would be eagerly paid, and that the holdings of the Pittsburgh Company in these States were too small to be taken into consideration. They contended that the wave of prosperity had not reached them, that there is a large overproduction of bituminous coal since the anthracite strike expanded the soft coal industry, and that many mining companies made losses rather than profits in 1905. The Illinois operators pointed out that the interstate agreement was ended when the miners of that State last year caused a law to be passed putting on the companies the expense of shot firing and making the mining cost greater than in other States in the competitive field, and that it could not be restored until that handicap was taken off from the Illinois operators.

The Indiana and Ohio operators demanded that the miners help to stop nonunion coal from West Virginia, Tennessee and Kentucky coming into Indiana and Ohio markets before asking a still greater increase in wages than now exists over those paid in nonunion fields. The miners replied that the public would not believe that prosperity had come to all others but had missed the coal operators, that large users of coal—the railroads and manufacturers—never developed faster nor made more money than now, and were able to pay any advance that the operators might have to put on to cover the small increase in miners' wages; that fuel to the railroads and factories costs less in the United States than in any other country in the world; that it was the large consumer and not the poor man that was fighting an increase of six cents a ton in the cost of coal. The miners argued that in response to the request of the President that operators and miners make another effort for settlement, the miners had withdrawn all demands made at the January conference with exception of the wage increase, and had reduced that from 12½ per cent. to the 1903 scale, equivalent to 5.55 per cent. On the other hand, the operators as a whole had not receded one jot from the position taken in January. The public would note this.

While the Illinois, Indiana and Ohio operators will not yield and the situation looks extremely critical, there is still a strong sentiment that there will be no strike: at least not at present. Matters may be again referred back to the Scale Committee and discussions drawn out until Saturday, when all contracts expire, and neither side will get the blame of forcing suspension. A working agreement may be had by simply continuing present conditions, the strike to be considered perhaps in the fall for obvious reasons. It was intimated this afternoon by more than one speaker that perhaps the President of the United States might use his good offices to settle the bituminous troubles as he had those in the anthracite field. This could be construed two ways. It has been suggested that the operators standing in the way of an agreement are either railroad operators or those the securities of whose companies are held by Wall Street financial interests. They reason that the President does not want an industrial war during his administration, and that one way to avoid it will be to be moderate on the railroad rate question.

The Illinois, Indiana and Ohio operators this afternoon made an adroit use of F. L. Robbins' speech at the January conference, where, after picturing the unfortunate conditions in the coal industry, he informed the miners that it was absolutely useless for them to demand any increase in wages. It was read to the conference with gusto. It is said that there are three men who know what the immediate outcome of the conference will be—John Mitchell, Francis L. Robbins and President Baer.

Single Phase Equipment for the Central Illinois Construction Company.

The single phase system of operating suburban electric railroads appears to be gaining ground in the Middle West. Within a few weeks two more companies have adopted it for extensions to their lines. One of these is the Central Illinois Construction Company. In view of the extensions ultimately to follow the construction now under way very careful consideration was given to the system of power distribution. As a result single phase alternating current has been adopted. The portion of the track now to be equipped consists of two 40-mile lines, one connecting Bloomington and Peoria, the other Springfield and Lincoln.

The company is now operating heavy suburban type cars, each equipped with four General Electric 75 horse-power direct current motors. The cars which will be run on the new extensions will be still heavier, and naturally the question of power distribution is important over a system so extensive. From the Riverton station the current is now distributed at 13,200 volts, but this line is being changed to 33,000 volts, and the latter station will be supplemented by a second power house located in Peoria, with a common 33,000-volt transmission line connecting the two stations.

The equipment will comprise ten 75 horse-power alternating current compensated motor car equipments, made by the General Electric Company, together with necessary substations, overhead line material, generating station equipment, &c. Each car equipment will consist of four 75 horse-power motors with Sprague-General Electric system of multiple unit control adapted for use on alternating current circuits. These are so arranged that they will permit tap control when running on alternating current, and series parallel resistance control when running on direct current. The cars will have air brake equipment supplied from General Electric air compressors, and will have arc headlights adapted for 25-cycle alternating current. The trolley will be of the pantograph type with rolling contact, raised and lowered by compressed air.

For hauling freight the company will employ a single phase locomotive equipped for service on the same roads as the regular motor cars. This will be an eight-wheel locomotive, with four General Electric 125 horse-power compensated alternating current motors. Its total weight will be 50 tons and it will exert a draw bar pull of 20,000 pounds. Supplied with current at 3300 volts and 25 cycles it will haul a train at a speed of 20 miles per hour. The locomotive also will be equipped with the Sprague-General Electric multiple unit control for operating on both direct and alternating circuit and will have the General Electric air brake equipment.

The power for this new rolling stock will be obtained from the present generating station at Riverton, increased in capacity by the addition of a 2000-kw. Curtis turbine, furnishing current at 25 cycles. The new power house at Peoria will be equipped with two 2000-kw. Curtis turbines. As soon as other lines now under consideration are constructed additional machines will be installed. The generator and high tension distribution system will be three-phase and will feed the present rotary converter substations and also the 80-mile section of track operating with alternating current.

The House Committee on Naval Affairs has decided in favor of building one battle ship of the largest type, the tonnage to be determined by the Secretary of the Navy, and three torpedo boat destroyers.

NEWS OF THE WORKS.

Iron and Steel.

The new charcoal furnace of the Mitchell-Diggins Iron Company, Cadillac, Mich., was blown in March 6 and has been operated successfully from the start, the output increasing meantime from 48 tons to 70 tons a day. Shipments have begun of the company's Cadillac grades.

The Elyria Iron & Steel Company, Elyria, Ohio, is reported to be planning to double the capacity of its plant by the erection of a rolling mill of the same capacity as the one now in operation.

Joseph E. Thropp, Earlston, Pa., who recently purchased the Catoctin furnace property, will soon begin to get the ore mines in condition for resumption of operations preparatory to shipping the ore to his Earlston furnace.

The Etna Steel & Iron Company, Etna, Ga., organized with a capital stock of $5,000,000, intends to make extensive improvements to its property and develop its mineral resources to the fullest extent. Plans for the improvements have not yet been perfected. The company produces high grade iron and manganese ore. T. N. Barnsdall, Pittsburgh, is resident; W. B. Lowe, New York, vice-president and general manager; S. Harrison Wagner, New Haven, Conn., secretary and treasurer, and A. T. Hamilton, Etna, Ga., resident manager.

The municipality of Morrisburg, Canada, has awarded contract to the Canadian General Electric Company for the construction of a power plant, which is also to supply power to the new plant of the Canada Tin Plate & Sheet Steel Company. It is expected that the plant will be ready for operation in July, at which time the Canada Tin Plate & Sheet Steel Company will have its buildings completed and equipped ready for operation as soon as the town can deliver the power. The company expects that its new plant will be one of the most modern tin plate and sheet steel mills on the continent.

S. V. Huber & Co., consulting engineers, Ferguson Building, Pittsburgh, are preparing plans for a Bessemer steel plant to be built by the Dominion Iron & Steel Company at Sydney, Cape Breton.

Haselton furnace of the Republic Iron & Steel Company, Youngstown, Ohio, will be blown out in a short time for relining and other extensive repairs.

The Oliver Iron & Steel Company will erect an electric power house at Pittsburgh.

Deeds recently registered in Pittsburgh show that the Crucible Steel Company of America paid $168,000 for the property it bought some time ago from the American Bridge Company in that city. The ground will be used by the Crucible Steel Company in the building of new works, probably for the manufacture of railroad steel springs.

General Machinery.

The Faulkner, Laugenour, Peart Company, Woodland, Cal., has incorporated, with a capital stock of $75,000 to conduct a machine shop and foundry. The incorporators are D. A. Faulkner, P. T. Laugenour and B. G. Peart. Several sites are under consideration for the erection of a new plant and until it is erected the machine shop formerly owned by Mr. Faulkner, but which has been turned over to the company, will be used for the filling of orders.

W. H. Millard, 108 East Main street, Cherokee, Iowa, is in the market for a second-hand slotting shear with an 18-inch throat.

The Universal Mfg. Company, headed by R. E. Nevin, president; R. C. Nevin, general manager, and A. C. Eby, secretary-treasurer, and with offices at 719 Society for Savings, Cleveland, has purchased the factory of the Elmore Furnace Company at Elmore, Ohio. The company is capitalized at $200,000 and will manufacture the Nevin gas engire and compressed air transmission for traction vehicles. The company is in the market for a number of machine tools.

The Wyson, Miles Company, Greensboro, N. C., has increased its capital stock and will erect a three-story building, 50 x 170 feet, which will be equipped for making patented wood mortising and sanding machines, and an office building, three stories, 35 x 50 feet. Work of construction will be started about May 1 and about $30,000 will be spent on buildings and equipment.

The Toledo Metal Sign Company, Toledo, Ohio, whose plant was destroyed by fire a short time ago, has completed plans for a new plant, giving it about double its former capacity. Temporary quarters have been secured. D. O. Douglass, manager, states that considerable new machinery will be purchased.

The Cleveland Armature Works Company, Cleveland, Ohio, has completed plans for a three-story factory building to be erected at the corner of St. Clair and Kirtland streets, that city. It will have 50,000 square feet of floor space. The company will install considerable new machinery which will be equipped with its own motors. The company is now making motors up to 10 horse-power and expects soon to build motors up to 25 horse-power. In addition to building motors the company makes lifting magnets, drills and does electrical repair work of all kinds.

N. L. Heckman, manager of the American Drill Company, Springfield, Ohio, has closed negotiations with the Commercial Club of Marion, Ind., to locate a plant in that city in which many Marion people will have a financial interest. A new company is to be organized and a building has been secured 120 feet square, to which will be added in the fall a two-story building 50 x 200 feet. The new plant will be placed in operation by May 15 if the necessary machinery can be installed by that time.

The Rhode Island Machine Company, Providence, R. I., has been organized to manufacture automobile engines, gears and machinery. A plant will be leased for the purpose. The incorporators are Walter M. Jordan, Edwin G. Pinkham and Clayton Harris. Communications should be addressed to Edwin G. Pinkham, care the J. W. Bishop Company, Worcester, Mass.

The Solid Steel Tool & Forge Company, Brackenridge, Allegheny County, Pa., manufacturer of drop forgings, car forgings, track tools, &c., will be taken out of the hands of the receiver, James D. Wilson, as soon as the necessary formalities can be gone through. This result has been brought about by the large and profitable business done by the receiver, and the company is now in a strong position. James H. Baker, who has been managing the business for the receiver, is to become a member of the new board of directors, and will devote himself to the company's interest.

The Maisby Machinery Company, Jacksonville, Fla., has incorporated to deal in saw mills, engines, boilers and wood working machinery. The company will act as special Southern agent for important concerns in the North, including the A. B. Farquhar Company, York, Pa. The officers are M. Maisby, J. W. Brown and E. L. Brown.

The Pennsylvania Pneumatic Pump Company will remove from Davenport, Iowa, to Binghamton, N. Y., where it will be reorganized under the name of the Binghamton Pump Company, and a new plant to cost about $20,000 will be erected. Temporarily, until the plant is completed, the company will have its pumps manufactured by the Osgood Scale Company of Binghamton.

Power Plant Equipment.

The Department of Water Supply, Gas and Electricity, New York, will receive bids until April 4 for grate bars, blowers, &c., for the Ridgewood and Spring Creek pumping stations, Brooklyn.

The Water Commissioners of Trenton, N. J., intend to spend $100,000 to increase the capacity of the Delaware River pumping station.

It is stated that plans are being prepared and bids will shortly be asked for erecting a new lighting plant for Watertown, N. Y.

The Warren Mfg. Company, Warren, Mass., has been organized in Massachusetts to manufacture the Merry engine, automobile and stationary gasoline motors, carburetors and mufflers. The company has leased the factory at Warren recently occupied by the Tarkelson Mfg. Company, manufacturer of firearms, which recently went into receivers' hands. The capital stock of the corporation is $30,000. The plant will be operated by one of the company's own engines.

A measure has been introduced in the Cleveland City Council to spend $40,000 in improving the South Brooklyn municipal lighting plant recently acquired by the city. The plant will be moved into the valley, where it will have better fuel and water facilities, and a 500-kw. generating unit, 600 horse-power of boilers and auxiliary apparatus will be installed.

Lockwood, Greene & Co., Boston, Mass., engineers in charge of construction of the new two-story building, 120 x 150 feet, at Greenville, S. C., for the McGee Mfg. Company, will purchase the shafting and electric lighting system about May 1. It is understood that the looms and other machinery have been purchased.

The Board of Water Commissioners of Yonkers, N. Y., will receive bids until April 5 for an 8,000,000-gallon horizontal high duty triple expansion pump.

The Latta & Martin Company, Hickory, N. C., is doing a large business, and among important installations of water works is that made for the city of Hickory. With this plant the city is obtaining its water supply from the South Fork River, a distance of three miles. In this system compressed air is forced through a three-inch pipe, forcing back a 10-inch stream of water against an elevation of 325 feet.

The Allis-Chalmers Company, Milwaukee, Wis., has recently received a large number of contracts for its machinery, including steam turbines. T. B. Laycock Mfg. Company, Indianapolis, Ind., one 200 kw. and one 100 kw.; Western United Gas & Electric Company, Aurora, Ind., 500 kw.; complete electric machinery for hydraulic power plant, Henry Riccardi, Bellaire, Mich.; two horizontal cross compound condensing vertical shaft centrifugal pumps, Nash Bros., Chicago; 30,000,000-gallon vertical triple expansion pumping engine, commissioner of District of Columbia, Washington, D. C.; Corliss engines, Plaza Hotel, New York, two 78 x 32 inch and others 22 x 42 and 25 x 47 inch; A. S. Hockaday, Ithasca, Texas, one 14 x 24 inch; Galena Iron Works, Galena, Ind., one 14 x 42 inch; Riter, Conley Mfg. Company, Pittsburgh, Pa., two 20 x 26 inch; Georgia Mfg. &

Public Service Company, Marietta, Ga., one 18 and 36 x 42 inch; two cross compound rolling mill engines, 50 and 78 x 60 inch, Carnegie Steel Company, Homestead, Pa.

The plant of the National Electric Company, Milwaukee, Wis., has been sold at auction to Charles L. Sullivan of Chicago for $500,000.

Foundries.

The Dennison Foundry & Engineering Company, Dennison, Ohio, maker of gray iron, aluminum and brass castings, advises us that it does not intend to enlarge its shop as reported. Its buildings include a main foundry of structural steel and brick 100 x 300 feet, engine room, coreroom, stockrooms and pattern shop. The company has some large Pittsburgh contracts and finds difficulty in securing men enough to get out the work.

The S. Obermayer Company, preparatory to remodeling its Cincinnati offices, has taken temporary quarters in the Union Trust Company Building. Extensive improvements will be made, as the company has felt for some time that the capacity of its general offices was inadequate to meet its rapidly growing business.

The Elmore Furnace Company, Elmore, Ohio, manufacturer of tubular furnaces and castings, has sold its foundry and machine shop to the Universal Mfg. Company, to take possession April 1. The Elmore Furnace Company will continue in business and will erect a larger plant.

The Buckeye Traction Ditcher Company, Findlay, Ohio, is at work on a new addition which will be utilized for a forge shop and a foundry, increasing its facilities by one-third. The company makes the Buckeye traction ditcher.

The Bellaire Stove Company, Bellaire, Ohio, has placed contracts for the erection of a two-story brick building, 80 x 100 feet, to be used as a foundry.

The Waterman Car Wheel & Foundry Company, Houston, Texas, recently organized, has completed its new buildings and the installation of its machinery and expects to be making car wheels by May 1. The boiler and engine were purchased from the Phœnix Iron Works, Meadville, Pa.; cranes and air equipment from the Curtis Company, St. Louis, Mo., and car wheel chills from the Whiting Foundry Equipment Company, Harvey, Ill. The plant will be complete in every detail and will consist of several buildings, the main one being 96 x 235 feet. The officers are J. J. Settegast, Jr., president; W. H. Waterman, first vice-president and general manager; G. H. Hermann, second vice-president, and A. J. Binz, secretary and treasurer.

W. B. Cook & Co., founders, Winston-Salem and Greensboro, N. C., have recently installed at their plant pulley molding machines to make pulleys from 5 to 24 inches in diameter.

The Northern Engineering Works, Detroit, Mich., has recently supplied to the foundry of the Holland Radiator Company, Bremen, Ind., about 1700 feet of overhead trolley track, with hangers, curves, switches and trolleys, comprising a modern overhead foundry distributing system.

The Russel Wheel & Foundry Company, Detroit, Mich., is completing the erection of a new foundry building, 150 x 370 feet, with three cupolas and having a capacity of about 75 tons of iron per day. The building will be equipped with one 10-ton and one 20-ton crane, electric elevator, &c. An addition 90 x 135 feet has also been made to the structural shop. By utilizing the space occupied by the old foundry, together with that which will be provided upon the completion of the above mentioned improvements, practically double the capacity of the car shops, machine shops and blacksmith shops will be afforded. An additional power plant, aggregating 350 horsepower, has been installed and purchases are nearly completed of all the machinery required for the new extensions. Electr'city and compressed air are used principally for motive power in operating the machinery and tools of the plant.

The Ashland Steel Range & Mfg. Company, Ashland, Ohio, has entered into a contract to make cement block machines for Scott & Dilgard of Ashland. It will enlarge its facilities to handle this work.

The Toledo Stove & Range Company, Toledo, Ohio, has awarded a contract for a large addition to its plant, the fourth that has been made in three years. When the addition is completed the plant will embrace about 160,000 square feet of floor space. Some new machinery will be purchased.

J. M. Herbert, who recently retired from the management of the Colorado & Southern Railroad, has associated himself with Cary Brothers and other capitalists of Denver, Col., with the intention of organizing a company and erecting a new iron foundry. The site for the foundry has not yet been selected and plans have not been completed for the building, but at the outset the foundry will have a daily capacity of about 80 tons of gray iron castings. Papers are being prepared for the incorporation of the new company, which is to work in harmony with the Vulcan Iron Works, the Denver Engineering Company, F. M. Davis and other plants in Denver which use large quantities of gray iron castings. There is plenty of capital behind the company and work of constructing the plant will go forward as soon as the plans can be prepared. In addition to J. M. Herbert, who will be at the head of the enterprise, and Cary Brothers, Tyson S. Dines, Charles T. Lowndes and Charles L. Tutt will be connected with the company.

The Central Foundry Company, Muskegon, Mich., has been organized by John Richardson, Sr., John Richardson, Jr., and Edward Meier. The company will manufacture machinery, engines, mill gearings, architectural and general castings, brass castings and babbitt and white metal. What is known as the Davis plant will be occupied by the company, which expects to be ready for business the latter part of March.

The Buckeye Steel Castings Company, Columbus, Ohio, will hold a special meeting of stockholders April 17 to vote on a proposition to increase the capital stock from $1,000,000 to $2,500,000. It is proposed to make the present outstanding stock a preferred issue. Of the new issue, $1,000,000 will be distributed to present stockholders as a 100 per cent. stock dividend and $500,000 will be held in the treasury. The preferred stock will be on a 6 per cent. basis and the common on a 4. In the last fiscal year the company is said to have earned practically 30 per cent. on its capitalization of $1,000,000.

The foundry building of the United States Radiator Works, at Corry, Pa., is nearly completed.

Bridges and Buildings.

The Beverly Building Association, Beverly, Mass., will build a 100-foot extension to its factory No. 3.

Thompson Iron Works, Philadelphia, Pa., is to build an addition to its plant, 18 x 35 feet. Engine, boilers and other necessary equipment have been purchased.

Fires.

The brick plant of the J. H. Gautier Company, Jersey City, N. J., was destroyed by fire March 24. The plant was erected a year ago at a cost of $100,000.

The power house of the Philadelphia Rapid Transit Company, Philadelphia, Pa., was burned March 23. The loss is estimated at $100,000.

The plant of the Whitlock Coil Pipe Company, Hartford, Conn., was damaged $25,000 by fire on March 25.

The ice making plant of George H. Davis & Co., Milford, Pa., was destroyed by fire March 26. The loss is placed at $13,000.

The plant of the Enterprise Boiler Company, Youngstown, Ohio, was destroyed by fire March 25. The company builds blast furnaces, steel stacks, boilers, tanks and heavy plate work. This is the second time in two years that this plant has been burned. It will probably be rebuilt on the old site and on a larger scale than before. Considerable iron working equipment will be needed for the new works.

The plant of the Metal Stamping Company, New York, was destroyed by fire March 26.

Hardware.

Monarch Grubber Company, Lone Tree, Iowa, reports a fine trade on both stump pullers and scales, with an excellent prospect for future orders. During the spring the company will double the capacity of the plant and will thus be in good position to take care of the increasing demand for its products, including grubbers, scales, feed grinders, stump pullers, &c.

The Findlay Axe & Tool Company, Findlay, Ohio, now has the necessary machinery installed for the production of a new line of hammers. The output will approximate about 50 dozen per day at first. The addition of this department necessitated an extensive increase both in plant and working force.

The Atlas Wire Fence & Post Company, a new corporation, has secured temporary quarters on Water street, near Cherry, Toledo, Ohio, and is now placing the necessary machinery therein. The company has been incorporated with a capital of $50,000, with the following directors: F. E. Humphrey, Edwin Tait, T. A. Wright, W. B. Phillip and F. C. Black.

The Wagner Mfg. Company, manufacturer of hardware specialties, Cedar Falls, Iowa, is about to erect an addition to its factory, consisting of one brick three-story and basement warehouse, 35 x 65 feet, and one two-story brick paint house, 25 x 30 feet. It has been necessary to enlarge the plant in order to take care of the rapidly increasing number of orders which are being received. The company is now bringing out a new line of steel hand sleds. It will be remembered that the Wagner Company is successor to the Matthias-Wagner Company, Cedar Falls, and the Daisy Mfg. Company, Seymour, Iowa.

At a meeting of the stockholders of the Smith Improved Lock Nut Company, Rockford, Ill., the capital stock was increased from $20,000 to $30,000. Since beginning operations five months ago the company has increased its output from 2000 nuts per day to 16,000, and with added machinery equipment the capacity of the plant will be still further increased within the next 60 days to 25,000 per day.

The Pyramid Post & Pole Company, Cedar Rapids, Iowa, has been organized and incorporated with a capital stock of $50,000 for the manufacture of steel and concrete fence posts, telephone poles, &c. The officers and directors are: J. M. Denning, who is president and treasurer of the Denning Wire & Fence Company, president; H. J. Achter, vice-president, and J. F. McE'roy, secretary. The plant site is located on the belt line of the Rock

Island Railway and material is already on the ground for the erection of a factory, which it is planned to have completed by May 1. Machinery purchased includes a 40 horse-power boiler and engine and one 6-inch Morris dredging pump for pumping sand from the river. The special equipment for the manufacture of the posts and poles includes mixing and conveying machinery, spraying and curing apparatus, machinery for manufacturing the steel centers and several hundred patent steel expansible tube molds. In the manufacture of the posts and poles the steel is imbedded in the concrete the same as in concrete structural work and holes are provided by means of a patent wire staple. The posts are used in connection with the ordinary woven wire fencing or barb wire.

Atlas Metal Mfg. Company, Irvington, N. J., has taken over the business of the Atlas Foundry & Machine Company and is making a general line of soft metal goods and staple articles and novelties. The company is about adding a line of stamped goods, such as combs, brushes, mirrors, whisk broom holders, jar tops, manicure sets and similar articles. Cyril Johnson is president and Silas Schwerin treasurer.

The National Screw & Tack Company, Cleveland, Ohio, has purchased the machinery and good will of the Crown Machine Works, Terre Haute, Ind., manufacturer of spring cotters and flat spring keys. This is an important addition to the company's already large and well equipped plant.

Miscellaneous.

J. L. Brandeis & Sons, Omaha, Neb., are now ready to receive bids on a fan system of heating for their new mercantile building, which is eight stories, 132 x 264 feet.

The Vitrified Wheel Company, Westfield, Mass., manufacturer of emery and corundum wheels, is to build a large addition to its works to permit of the erection of a large kiln and to make available additional dry room. When the present plant was erected it was believed that ample provision had been made for the increase of the business for some years to come, but the industry has grown to such an extent that material improvements to manufacturing facilities have become imperative.

The Crucible Steel Forge Company, Cleveland, Ohio, is doing a large amount of work in the production of forged rolls for rolling shafting, also in the production of forged shafting itself.

The Toledo Builders' Supply Company, Toledo, Ohio, is planning to erect a large mortar mixing plant of its own design and is securing estimates from builders of such machinery. It is planning to have its outfit manufactured on a royalty.

The Continental Sugar Company, Cleveland, Ohio, is planning to erect a 600-ton beet sugar plant at Defiance, Ohio. Work will probably not be started until next fall.

Crandal, Stone & Co., Binghamton, N. Y., will rebuild the part of their plant which was recently damaged by fire. No new machinery will be required, as that which was damaged consisted of special machines of the company's own make.

The H. W. Johns-Manville Company, 100 William street, New York, through its Chicago branch, has just completed a large contract for the installation of Fire Felt pipe and boiler covering in the new plant of Sears, Roebuck & Co., Chicago, involving an expenditure of several thousand dollars. In Fire Felt the company claims to have reached the highest degree of efficiency in pipe covering, as it is absolutely fireproof, elastic, light in weight and unaffected by expansion or contraction of pipes. The above is but one of many large contracts that this company has recently executed, the largest and most exacting firms finding it to their advantage to place work of this kind under the supervision of experts and no company being better equipped for undertaking work of this magnitude. In addition to being an extensive manufacturer of asbestos coverings, packings and roofing specialties the H. W. Johns-Manville Company is one of the largest manufacturers of electrical supplies. It has branches in all large cities.

The Consumers' Ice Company, Toledo, Ohio, is being formed by heavy consumers of ice in that city with a view to erecting an artificial ice plant. Edward A. Hanner, William Bretsch, Thomas Marlowe, Fred. J. Young and Jacob Deckler are on a committee to secure estimates as to the cost of 50 and 100 ton plants.

The Blaw Collapsible Steel Centering Company, Pittsburgh, Pa., has organized to manufacture Blaw collapsible steel centers for concrete sewer construction. The device, which is patented, will be manufactured by contract until such time as the company can secure a suitable site for a plant. The officers are M. Lehman, president; William B. Fuller, vice-president; Jacob B. Blaw, secretary; Erwin E. Lehman, treasurer.

The C. W. Seaward Company has been incorporated at Buffalo with a capitalization of $20,000 to manufacture and sell printing machinery, type and allied articles. The directors are Charles A. Wendell, Albert M. Austin, Lucius E. Varing, Homer H. Snow and George Wolfe of New York City.

The H. & M. Automatic Regulator Company has been incorporated at Rochester, N. Y., to manufacture devices for regulating temperature and steam and air pressure. Capital stock is $50,000. Incorporators are J. M. Taylor, G. E. Taylor and D. Stewart, Rochester.

The Niagara Falls Brass Company, Niagara Falls, N. Y., has been incorporated with $6,000 capital stock. Directors, William R. Pooley, John J. Crumlish and J. Nobles Frantz.

The Asphalt Ready Roofing Company, New York, has rebuilt the part of its works at Jones Point, N. Y., which was destroyed by fire on January 11 and has re-erected the machinery. The company is now ready to fill all orders promptly for its Arrow and Protection brands of asphalt ready roofing.

The John Eichleay, Jr., Company, Pittsburgh, has received a contract for the new five-story Thaw Building to be erected at Smithfield street and First avenue, Pittsburgh. About 250 tons of steel will be used.

The High House Coal & Coke Company, Uniontown, Pa., has been reorganized, Theodore Allen being elected president; O. C. Kuhn, vice-president; George W. Allen, secretary, and Andrew Brown, treasurer. Its plant, which has been idle for some time, will soon be started.

The Youngstown Car Mfg. Company, Youngstown, Ohio, will erect a large steel building in which equipment will be installed for the repairing of steel cars.

The Westinghouse Traction Brake Company, an identified interest of the Westinghouse Air Brake Company, Wilmerding, Pa., and which manufactures magnetic air brake equipment for electric cars, is crowded with work. The concern has recently received orders for this class of equipment from the New York Central & Hudson River Railroad Company, the New York, New Haven & Hartford Railroad Company, the Philadelphia Rapid Transit Company, the Philadelphia & Western Railroad Company, the West Jersey & Seashore Railroad Company, the Pittsburgh Railways Company and the Indianapolis Traction & Terminal Company.

In 22½ working days recently the Juniata shops of the Pennsylvania Railroad at Altoona, Pa., turned out 24 locomotives.

The Thomas Carlin's Sons Company's Extensive Business.

This company, whose plant is located on River avenue, Allegheny, Pa., manufactures boilers, rolling mill machinery, grinding and mixing pans, heavy plate work and hoisting engines. It is operating its works to full capacity, having a great deal of business booked. On the floor at the present time are a number of heavy shears, among which is one weighing 80,000 pounds, for shipment to Hausman & Wimmer, Carnegie, Pa.; another weighing 35,000 pounds for the Hay Company, Limited, Rochester, N. Y.; a large bar shear for the London Rolling Mill Company of Canada, and a scrap shear, weighing 22,000 pounds, for shipment to Wilmington, Del. The company is also building a heavy scrap shear, weighing 150,000 pounds, for the International Iron & Metal Company, New York City; a large cropping shear for the Pennsylvania Steel Company, Steelton, Pa.; a No. 18 scrap shear for delivery at Boston, Mass.; a No. 28 bar shear for Brenner Brothers, Woonsocket, R. I., and two cropping shears, two bar shears and a large billet shear for the Bethlehem Steel Company, South Bethlehem, Pa.

Large orders are in hand for grinding and mixing pans, among them three automatic grinding and mixing pans for the Gould Coupler Company, Depew, N. Y., making a total of six furnished to this company; two grinding and mixing pans for the new open hearth steel plant of Milliken Brothers, now building on Staten Island, N. Y.; one for the Tennessee Fertilizer Company, Birmingham, Ala.; three grinding and mixing pans and an ore crusher for the new steel plant of the Youngstown Sheet & Tube Company, Youngstown, Ohio, and one for the Steel Foundry Company, Cincinnati, Ohio. The last named four pans are to be driven by electric motors. There were made and shipped 11 of these pans in February.

In its hoisting machine department the company is very busy and is building at present two 40 horse-power four-drum steam hoisting engines for the United States Government at Pittsburgh; one six-drum hoisting engine for shipment to Surinam, South America, to be used in gold dredging work; a double drum electric hoist in connection with an 80-foot derrick, for the General Castings Company, Verona, Pa., to be used in its flask storage yard; an electric hoist for the Cleveland City Railways Company, Cleveland, Ohio, to be used on a wrecking car, and a five-drum steam hoisting engine with derrick and clam shell bucket for the Pittsburgh Railways Company, to be used for hoisting coal from the river to its coal dock at its power house at Rankin, Pa.

The Iron and Metal Trades

The uncertainty with regard to the labor situation in the Bituminous Coal fields has been the principal factor affecting the Pig Iron markets of the country. The consumption is on so enormous a scale and is crowding the full make so closely that even a moderate enforced restriction would be highly embarrassing. It really does not look as though consumers are very much frightened, and the concessions which a number of sellers continue to make occasionally indicate that some manufacturers of Pig Iron are dubious as to the future, so far as the prices are concerned which have been established for some months past.

Deliveries of Crude and Finished Iron and Steel are proceeding at a record rate, and in some of the heavy lines contracting for the future is going on at an extraordinary pace. This is notably the case in Steel Rails. With what the mills have on their books and with what is now under negotiation the majority of the plants are provided with work until near the end of the year.

The most interesting transaction in the Rail trade during the past week has been the sale by the United States Steel Products Export Company of 50,000 tons for delivery this year to the Grand Trunk Pacific Railroad. It is understood that this order came to an American mill simply because the Canadian Rail mills were utterly unable to make the Rails.

For home roads the following sales were made: From 60,000 to 70,000 tons to the Atchison, Topeka & Santa Fé, this being in addition to former orders aggregating 57,000 tons; to the Georgia Central, 10,000 tons in addition to former orders; to the Chesapeake & Ohio, 10,000 tons, and to an Alaska road 4000 tons.

There is a steady flow of good contracts coming out for the Structural mills. In moderate sized and small lots an aggregate of 54,000 tons has been booked by the American Bridge Company thus far this month. Among the other contracts taken by other plants during the last week are 2000 tons for the Buffalo, Rochester & Pittsburgh and 4000 tons for the Erie. There are in the market 7000 tons for the Lehigh Valley, 6000 tons for a building at St. Louis and an aggregate of 7100 tons for two buildings on the Pacific Coast.

Steel prices have hardened all along the line. In Pittsburgh the Carnegie Steel Company has announced an advance of $2 per ton, which makes the official price for Open Hearth and Bessemer Billets $27 per ton and for Sheet and Tin Plate Bars $28 per ton, random lengths.

The Plate trade is very quiet, so far as new orders are concerned. Deliveries, however, continue heavy.

There is some unevenness in the prices of Sheets, the concessions, however, being chiefly made by second hands. The new orders for Tin Plate are flowing in only very slowly. The Pipe trade continues to suffer from low prices.

The makers of Steel Bars are in conference in Pittsburgh to-day. The question of making prices for the season contracts with the implement industry is pressing for settlement. The expiring contracts were made last year on the basis of 1.30c. per lb. Pittsburgh, and the implement manufacturers avow their determination not to pay the 1.50c. rate which the makers have been demanding.

One of the effects of the threatened labor trouble in the Coal trade has been to create a livelier demand for Steel Melting Scrap, as a substitute for Pig Iron. Quite some heavy sales have been made, and prices have stiffened.

The Cast Iron Pipe industry is facing an enormous demand. Among the new orders in the market are 24,000 tons for the City of New York. Philadelphia is expected soon to come in for at least 20,000 tons and possibly for 25,000 tons.

A Comparison of Prices.

Advances Over the Previous Month in Heavy Type, Declines in Italics.

At date, one week, one month and one year previous.

	Mar.28, 1906.	Mar.21, 1906.	Feb.28, 1906.	Mar.29, 1905.
PIG IRON, Per Gross Ton:				
Foundry No. 2, Standard, Philadelphia	*$18.25*	$18.25	$18.50	$17.75
Foundry No. 2 Southern, Cincinnati	*16.50*	16.50	16.75	16.25
Foundry No. 2, Local, Chicago	19.00	19.00	19.00	17.25
Bessemer, Pittsburgh	**18.25**	18.35	18.10	16.35
Gray Forge, Pittsburgh	16.85	16.85	16.85	16.00
Lake Superior Charcoal, Chicago	*19.75*	19.75	20.00	18.50
BILLETS, RAILS, &c., Per Gross Ton:				
Bessemer Billets, Pittsburgh	27.00	26.50	27.00	24.00
Forging Billets, Pittsburgh	32.00	32.00	32.00	27.00
Open Hearth Billets, Phila	29.00	29.00	29.00	28.00
Wire Rods, Pittsburgh	34.00	34.00	34.00	34.00
Steel Rails, Heavy, Eastern Mill	28.00	28.00	28.00	28.00
OLD MATERIAL, Per Gross Ton:				
O. Steel Rails, Chicago	*13.50*	13.50	15.00	15.00
O. Steel Rails, Philadelphia	**17.00**	16.25	16.50	18.00
O. Iron Rails, Chicago	*20.50*	20.50	21.50	20.00
O. Iron Rails, Philadelphia	*21.50*	21.00	22.00	25.00
O. Car Wheels, Chicago	*18.00*	18.00	19.00	16.00
O. Car Wheels, Philadelphia	*17.00*	16.75	18.75	17.00
Heavy Steel Scrap, Pittsburgh	*14.50*	14.50	14.75	16.00
Heavy Steel Scrap, Chicago	**13.50**	13.00	13.00	14.75
FINISHED IRON AND STEEL, Per Pound:	Cents.	Cents.	Cents.	Cents.
Refined Iron Bars, Philadelphia	1.73½	1.73½	1.73½	1.73½
Common Iron Bars, Chicago	*1.71½*	1.71½	1.75	1.62½
Common Iron Bars, Pittsburgh	*1.60*	1.65	1.85	1.65
Steel Bars, Tidewater, New York	1.64½	1.64½	1.64½	1.64½
Steel Bars, Pittsburgh	1.50	1.50	1.50	1.50
Tank Plates, Tidewater, New York	1.74½	1.74½	1.74½	1.74½
Tank Plates, Pittsburgh	1.60	1.60	1.60	1.60
Beams, Tidewater, New York	1.84½	1.84½	1.84½	1.74½
Beams, Pittsburgh	1.70	1.70	1.70	1.60
Angles, Tidewater, New York	1.84½	1.84½	1.84½	1.74½
Angles, Pittsburgh	1.70	1.70	1.70	1.60
Skelp, Grooved Steel, Pittsburgh	1.57½	1.57½	1.57½	1.65
Skelp, Sheared Steel, Pittsburgh	1.60	1.60	1.60	1.70
SHEETS, NAILS AND WIRE, Per Pound:				
Sheets, No. 27, Pittsburgh	*2.25*	2.25	2.30	2.30
Wire Nails, Pittsburgh	1.85	1.85	1.85	1.80
Cut Nails, Pittsburgh	1.80	1.80	1.80	1.80
Barb Wire, Galv., Pittsburgh	2.30	2.30	2.30	2.25
METALS, Per Pound:	Cents.	Cents.	Cents.	Cents.
Copper, New York	**18.62½**	18.62½	18.12½	15.25
Spelter, St. Louis	**6.05**	6.12½	5.90	5.75
Lead, New York	5.35	5.35	5.35	4.50
Lead, St. Louis	5.27½	5.27½	5.27½	4.50
Tin, New York	**37.45**	37.12½	36.25	29.87½
Antimony, Hallett, New York	**17.00**	16.50	15.25	7.87½
Nickel, New York	40.00	40.00	40.00	40.00
Tin Plate, Domestic, Bessemer, 100 pounds, New York	$3.69	$3.69	$3.69	$3.74

Chicago.

FISHER BUILDING, March 27, 1906.

The outcome of the meeting of the Steel Bar manufacturers in Pittsburgh on Wednesday is awaited with much interest by large Western consumers and the closing of a large tonnage of Bars and Agricultural Shapes hinges upon its action. The meeting has been called primarily to consider this phase of the situation, and if concessions in prevailing prices are made several large contracts will be closed for delivery during the year beginning April 1. These consumers are now receiving Bars on the basis of 1.30c., Pittsburgh, and are not anxious to cover at 1.50c., the present price, preferring to take their chances on lower values in the next two or three months unless quotations favorable to them are made. Western railroads continue heavy buyers of Rails, the Atchison, Topeka and Santa Fé having closed for 40,000 tons with the Pennsylvania Steel Company for Galveston delivery. No contracts of importance have been placed with the Structural mills during the week, but a 6000-ton order for material to be used in the erection of the Syndicate Annex Building, St. Louis, is now up for consideration, and will be placed within the next few weeks. The demand for Shapes from stock is not as insistent as during the fall and winter months and quotations have declined. The facilities for warehousing this material are to be greatly extended. Joseph T. Ryerson & Son are now doubling the capacity of their warehouse, while the storage capacity of the North Works of the Illinois Steel Company is being greatly increased. Concessions are more freely offered on Box Annealed Sheets, some of the independent mills quoting as low as 2.30c., Pittsburgh, on No. 28. Forging Billets have been advanced sharply, Eastern mills having sold up their output through the first half of the year, and small lots

for immediate shipment are quoted as high as $37, Chicago. The Tennessee Coal, Iron & Railroad Company has also withdrawn its quotation of $33, Birmingham, and, as some of the Western consumers of Forging Billets are still uncovered higher prices are looked for in the near future. One large Open Hearth interest has purchased scattering lots of Melting Steel Scrap, aggregating 6000 tons, during the week at prices ranging from $13.50 to $14. The Pig Iron market is without feature, and $13.75, Birmingham, is freely named on No. 2.

Pig Iron.—Transactions have been limited almost entirely to small lots for immediate delivery, and while as high as $14, Birmingham, has been secured for No. 2, the prevailing price is 25c. a ton lower. Two of the largest factors in the South are still quoting No. 2 at $14.50, while a third has withdrawn from the market until June 1. Western foundries generally have not covered requirements for the second quarter, and two of the largest buyers are expected to purchase shortly for third quarter requirements. Nevertheless, the amount of inquiry that is coming forward would not indicate an early buying movement, the condition of the market being such as to discourage consumers. Northern furnaces are maintaining prices at $19, f.o.b. Chicago, and while they are not closing much business on this basis their furnaces are sold generally ahead through the month of May and they are not urging consumers to buy. Prevailing quotations, f.o.b. Chicago, are as follows:

Lake Superior Charcoal	$19.75 to $20.00
Northern Coke Foundry, No. 1	19.50 to 19.75
Northern Coke Foundry, No. 2	19.00 to 19.25
Northern Coke Foundry, No. 3	18.50 to 18.75
Northern Scotch, No. 1	20.00 to 20.25
Ohio Strong Softeners, No. 1	20.05 to 20.30
Ohio Strong Softeners, No. 2	19.55 to 19.80
Southern Coke, No. 1	18.25 to 18.40
Southern Coke, No. 2	17.65 to 17.90
Southern Coke, No. 3	17.15 to 17.40
Southern Coke, No. 4	16.65 to 16.90
Southern Coke, No. 1 Soft	18.15 to 18.40
Southern Coke, No. 2 Soft	17.65 to 17.90
Southern Gray Forge and Mottled	16.15 to 16.40
Malleable Bessemer	19.00 to 19.25
Standard Bessemer	19.30 to 19.55
Jackson Co. and Kentucky Silvery, 6 %	21.30
Jackson Co. and Kentucky Silvery, 8 %	23.30
Jackson Co. and Kentucky Silvery, 10 %	25.30

Metals.—Pig Tin in car lots has developed further strength. A better tone prevails for Lead and prices are firmly held. We quote: Casting Copper, 18¼c. to 18¾c.; Lake, 18½c. to 19c.; Pig Tin, car lots, 38c. to 38½c.; small lots, 38½c. to 39c.; Spelter, prompt delivery, 6⅜c. to 6⅝c. for car lots; Lead, Desilverized, 5.45c. to 5.70c. for 50-ton lots; Corroding, 6c. to 6.25c. for 50-ton lots; on car lots, 2¼c. per 100 lbs. higher; Sheet Zinc is $7.75 list, f.o.b. Laselle in car lots of 600-lb. casks. On Old Metals we quote: Copper Wire, 16c.; Heavy Copper, 15½c.; Copper Bottoms, 14¾c.; Copper Clips, 15¼c.; Red Brass, 14¾c.; Red Brass Borings, 12¾c.; Yellow Brass, Heavy, 11¾c.; Yellow Brass Borings, 9¾c.; Light Brass, 8½c.; Lead Pipe, 4⅝c.; Tea Lead, 4½c.; Zinc, 4½c.; Pewter, No. 1, 24c.; Tin Foil, 29c.; Block Tin Pipe, 27½c.

Billets and Rods.—Eastern mills that had been offering Forging Billets in this market at comparatively low prices during the last few months have withdrawn quotations and are refusing business for delivery the remainder of the first half of the year. Inasmuch as the Western mills are out of the market entirely, the few odd lots that are to be obtained from time to time are sold as high as $37, f.o.b. Chicago. The Tennessee Coal, Iron & Railroad Company has also withdrawn its quotation of $33, Birmingham. The American Steel & Wire Company still continues out of the market on Rods, which are held at prices ranging from $36 to $37, Chicago.

Rails and Track Material.—The Atchison, Topeka & Santa Fé Railroad closed a contract last week with the Pennsylvania Steel Company for the shipment of 40,000 tons of Standard Section Rails from Sparrows Point, Md., to Galveston, for delivery during the last half of the year. Few of the Western roads are now in the market for additional tonnage for this year's requirements, although they will gladly place their 1907 allotment, providing the Rail mills will open their books. Quotations are unchanged, as follows: Angle Bars, accompanying Rail orders, 1906 delivery, 1.50c.; carload lots, 1.75c.; Spikes, 2.10c.; Track Bolts, 2.65c. to 2.75c., base, Square Nuts. The store prices on Track Supplies range from 15c to 20c. above mill prices. Light Rails, 30 to 45 lb. sections, $27 to $28; 25-lb., $28 to $29; 20-lb., $29 to $30; 16-lb., $30 to $31; 12-lb., $31 to $32, and lighter sections down to 8-lb., $38 to $40, f.o.b. mill. Standard Sections are unchanged, at $28, f.o.b. mill, full freight to destination.

Structural Material.—The announcement that J. T. Ryerson & Son will double their structural warehouse in this city indicates the growth in the demand for material from stock. This has naturally been abnormal during the last six months, on account of the inability of the mills to make prompt shipments. Bids are now being asked for furnishing the 6000 tons of material to be used in the erection of the Syndicate Annex Building at St. Louis. No contracts of importance, however, are pending in this district. Material from stock continues to be held on the basis of 2.25c. to 2.35c., and reports from distributers indicate that shipments are not as heavy as they were several months ago. Mill quotations are unchanged, as follows: Beams and Channels, 3 to 15 inches, inclusive, 1.86½c.; Angles, 3 to 6 inches, ¼ inch and heavier, 1.86½c.; Angles, larger than 6 inches on one or both legs, 1.96½c.; Beams, larger than 15 inches, 1.96½c.; Zees, 3 inches and over, 1.86½c.; Tees, 3 inches and over, 1.91½c., in addition to the usual extras for cutting to extra lengths, punching, coping, bending or other shop work.

Plates.—The Plate market generally is without change, specifications coming forward perhaps a little more freely than they have been for some time, but the mills are still in position to make fairly prompt deliveries, especially on wide Sheared Plates. Specifications from Steel car works continue heavy and readily absorb the bulk of the Universal mill output. Quotations are firm and unchanged, as follows: Tank quality, ¼-inch and heavier, wider than 6¼ and up to 100 inches wide, inclusive, car lots, Chicago, 1.76½c.; 3-16-inch, 1.86½c.; Nos. 7 and 8 gauge, 1.91½c.; No. 9, 2.01½c.; Flange quality, in widths up to 100 inches, 1.86½c., base, for ¼-inch and heavier, with the same advances for lighter weights; Sketch Plates, Tank quality, 1.86½c.; Flange quality, 1.96½c. Store prices on Plates are as follows: Tank Plate, ¼-inch and heavier, up to 72 inches wide, 2c. to 2.10c.; from 72 to 96 inches wide, 2.10c. to 2.20c.; 3-16-inch up to 60 inches wide, 2.10c. to 2.20c.; 72 inches wide, 2.35c. to 2.45c.; No. 8, up to 60 inches wide, 2.15c. to 2.25c.; Flange and Head quality, 25c. extra.

Sheets.—Speculative lots of Sheets are being offered more freely at concessions of $1 to $2 a ton below mill prices. Consumption, however, continues at a tremendous rate and mill specifications are very heavy. Quotations on Light Sheets from store have declined from $1 to $2 a ton, according to gauge. We revise quotations as follows: Blue Annealed, Nos. 9 and 10, 1.86½c. to 1.91½c.; Nos. 16 and 17, 2.06½c. to 2.11½c.; Box Annealed, Nos. 18 to 20, 2.26½c. to 2.31½c.; No. 27, 2.46½c. to 2.51½c.; No. 28, 2.56½c. to 2.61½c.; Galvanized Sheets, Nos. 10 to 14, 2.61½c.; Nos. 17 to 21, 2.86½c.; Nos. 22 to 24, 3.01½c.; Nos. 25 and 26, 3.21½c.; No. 27, 3.41½c.; No. 28, 3.61½c.; No. 30, 4.11½c. Sheets from store: Blue Annealed, Nos. 10 and 11, 2.10c. to 2.20c.; Nos. 12 and 13, 2.15c. to 2.25c.; Nos. 14 and 15, 2.20c. to 2.30c.; No. 16, 2.30c. to 2.40c. Box Annealed, Nos. 18 to 20, 2.50c. to 2.55c.; Nos. 22 to 24, 2.55c. to 2.60c.; No. 26, 2.60c. to 2.65c.; No. 27, 2.65c. to 2.70c.; No. 28, 2.75c. to 2.80c.; No. 30, 3.15c. to 3.20c. Galvanized from store: Nos. 10 to 20, 3c. to 3.05c.; Nos. 22 to 24, 3.15c. to 3.20c.; No. 26, 3.35c. to 3.40c.; No. 27, 3.55c. to 3.60c.; No. 28, 3.75c. to 3.80c.; No. 30, 4.95c. to 5c.

Bars.—Much interest is manifested in the meeting of the Steel Bar manufacturers which will be held in Pittsburgh on Wednesday. The placing of several large contracts by Western implement makers hinges on the action to be taken, and if a concession in prices is made on this business it is probable that most of the large Western Bar tonnage will be placed within the next few weeks. Many of the large consumers are buying concurrently, their contracts already having expired, and if the present basis is insisted upon they will continue to purchase for immediate requirements only and will await what they consider a more opportune time before closing for their year's requirements. The Bar Iron market is quiet and all of the mills are firmly maintaining the recently established basis, although little new tonnage is being taken. We revise quotations as follows: Iron Bars, 1.71½c.; Steel Bars, 1.66½c., both half extras; Hoops, 2.06½c., extras as per Hoop card; Bands, 1.66½c., as per Steel card; Soft Steel Angles and Shapes, 1.66½c., half extras. Store prices are as follows: Bar Iron, 2.10c.; Steel Bars, 1.85c., and as high as 2c. is asked on certain scarce sizes; Steel Bands, 1.85c. to 1.90c., half extras; Soft Steel Hoops, 2.30c. to 2.40c., full extras.

Merchant Pipe.—Consumers, although buying freely, are merely placing orders with the mills to cover immediate requirements, and notwithstanding the low prices that are prevailing are not placing contracts for future deliveries. Quotations continue on a basis of 81 per cent. off the list, Pittsburgh, although official discounts on car lots, Chicago, are unchanged, as follows: Black Steel Pipe, 78.35 per cent. on the base sizes ¾ to 6 inches, and Galvanized, 68.35 per cent. Iron Pipe is quoted from 1½ to 2 points higher. From store in small lot Chicago jobbers are quoting 76½ to 77 per cent. on Black Steel Pipe, ¾ to 6 inches.

Boiler Tubes.—The situation is practically unchanged, although specifications are possibly coming forward a little more freely than they have been. Little new business is being placed, as most of the large Western consumers covered requirements before the first of the year. Official discounts, base sizes, in car lots, are as follows: Steel Tubes, 62.35; Iron, 51.35; Seamless, 50.35; 2½-inch and smaller and lengths over 18 feet, and 2½-inch and lengths over 22 feet, 10 per cent. extra. Store prices are unchanged, as follows:

	Steel.	Iron.	Seamless.
1 to 1½ inches	40	35	42½
1¾ to 2¼ inches	50	35	35
2½ inches	52½	35	30
2¾ to 5 inches	60	47½	42½
6 inches and larger	50	35	..

Merchant Steel.—The mills are not closing much new business, and most of the Implement manufacturers, although many of their contracts expire on April 1, are holding off and are only buying to cover immediate requirements. The action of the Steel Bar manufacturers will largely govern the action to be taken with reference to this material, and if concessions are made on Steel Bars some action may be taken by the manufacturers of this line of material that may lead to the placing of heavy contracts. Quotations are unchanged, as follows: Planished or Smooth Finished Tire Steel, 1.70c.; Iron Finish up to 1½ x ½ inch, 1.65c., and Iron Finish, 1½ x ½ inch and larger, 1.50c., base, Pittsburgh, and Channels for solid rubber tire are quoted as follows: ¾, ⅞ and 1 inch, 2c., and 1⅛ inch and larger, 1.90c., Pittsburgh; Smooth Finished Machinery Steel, 1.91½c.; Flat Sleigh Shoe, 1.71½c.; Concave and Convex Sleigh Shoe, 1.86½c.; Cutter Shoe, 2.40c.; Toe Calk Steel, 2.21½c.; Railway Spring, 1.86½c.; Crucible Tool Steel, 6½c. to 8c.; special grades of Tool Steel, 13c. and up; Shafting, 50 per cent. discount on car lots and 45 per cent. in less than car lots, in base territory.

Cast Iron Pipe.—There have been no municipal lettings of note during the past week, although several large contracts are up for consideration during the month of April. Notwithstanding the lower prices that are being made on Southern Iron, quotations on Cast Iron Pipe remain unchanged. We quote as follows: Water Pipe, 4-inch, $31; 6, 8, 10 and 12 inch, $30; over 12-inch, $29, with $1 extra for Gas Pipe. Large municipal contracts are usually placed at somewhat lower basis.

Coke.—The by-product Coke producers in this district have laid in a large Coal supply to carry them over well through the summer months in the event of a Coal strike. It is estimated that their stocks are large enough to carry them through the month of August, and there is little fear in this market of any Coke shortage regardless of the miners' action. Connellsville Coke continues to come into this market freely, and is offered on the basis of $2.75 to $3 at the ovens and as high as $3.15 has been secured. Consignments of lower grades are very light, indicating that Coke producers are accumulating stocks and are anticipating higher prices. By-product Coke continues to be quoted on the basis of $5.80, f.o.b. Chicago.

Old Material.—One producer of Open Hearth Steel in this district has been purchasing Heavy Melting stock quite heavily in the last ten days and the contracts closed cover an aggregate of 6000 tons. The prices at which this material was secured range from $13.50 to $14. As a result, the Steel Scrap situation is firmer than it has been at any time in the past two months. On the railroad lists that closed last week slightly better prices than have been prevailing were reported, and this would indicate that the market generally is on somewhat of a firmer basis. The Iron mills are not buying, however, as they purchased heavily last fall, and some of them took advantage of the present decline and have been making small purchases from time to time. The range of prices paid by large consumers to producers and dealers, per gross ton, car lots, f.o.b. Chicago, is as follows:

Old Iron Rails	$20.50 to $21.00
Old Steel Rails, 4 feet and over	15.50 to 16.00
Old Steel Rails, less than 4 feet	13.50 to 14.00
Heavy Relaying Rails, subject to inspection	27.00 to 27.50
Old Car Wheels	18.00 to 19.00
Heavy Melting Steel Scrap	13.50 to 14.00
Frogs, Switches and Guards	13.50 to 14.00
Mixed Steel	12.00 to 12.50

The following quotations are per net ton:

Iron Fish Plates	$15.50 to $16.00
Iron Car Axles	22.00 to 22.50
Steel Car Axles	18.50 to 19.00
No. 1 Railroad Wrought	14.75 to 15.00
No. 2 Railroad Wrought	13.75 to 14.00
Locomotive Tires, smooth	14.00 to 14.50
Railway Springs	13.50 to 14.00
No. 1 Dealers' Forge	11.50 to 12.00
Mixed Busheling	10.00 to 10.50
Iron Axle Turnings	11.00 to 11.50
Soft Steel Axle Turnings	11.00 to 11.50
Machine Shop Turnings	11.00 to 11.50
Cast Borings	9.00 to 9.50
Mixed Borings, &c	9.00 to 9.50
No. 1 Mill	9.00 to 9.50
No. 2 Mill	7.50 to 8.00
No. 1 Boilers, cut to Sheets and Rings	10.50 to 11.00
No. 1 Cast Scrap	12.50 to 13.00
Stove Plate and Light Cast Scrap	10.50 to 11.00
Railroad Malleable	13.00 to 13.50
Agricultural Malleable	12.00 to 12.50

Hickman, Williams & Co., Chicago, have been appointed representatives in the Chicago district and the Northwest for the sale of Foundry Pig Iron manufactured by the Woodward Iron Company, Birmingham, Ala. They have handled the product of this company in St. Louis and Louisville, and their territory has now been extended.

The Chattanooga Furnace, Chattanooga, Tenn., it is announced will be put in blast about April 1. De Camp Brothers & Yule, Iron, Coal & Coke Company, Chicago and St. Louis, have the exclusive agency for the sale of this Iron in the Chicago and St. Louis territory.

Theodore Geissmann & Co., Chicago, announce opening a branch office at 536 Andrus Building, Minneapolis. E. D. Thompson has been placed in charge.

Philadelphia.

REAL ESTATE TRUST BUILDING, March 27, 1906.

The improved feeling noted in our last report has been maintained, and it begins to look like heavier buying in the near future. There are some soft spots yet, but the general undertone is stronger, and the feeling is disposed to be somewhat more confident than it has been during the past month or two. The aggregate of orders on the books of the Eastern Pig Iron Association is as large as at any time on record, and as deliveries are called for with the utmost urgency there appears to be no reason for pessimistic views. Buying has not been specially significant, although in one way or another the aggregate of sales is not inconsiderable in point of tonnage. Makers are very firm in their prices, and if the differences in regard to labor can be adjusted the chances for an active market would be almost a certainty. In many cases there is still a disposition to wait developments before placing large orders, but there is a distinctly better feeling in regard to prices; not that an immediate advance is looked for, but with light stocks at furnaces and a continued large consumption the chances of a decline appear to be somewhat dubious. Against this, however, it may be noted that there is some little falling off in the demand for the lighter finished products, and reports both East and West indicate easier conditions in several specialties. Pig Iron, however, is probably the safest barometer, and as far as that goes it may be said that prospects are good. The feeling may not be buoyant, but it is certainly not gloomy nor despondent, and very little new buying might easily develop a more active market at improving prices. Nothing definite need be expected, however, until the threatened Coal strike is eliminated as a disturbing factor.

Pig Iron.—There is very little change from last week, and none that has had any influence on prices. The improved prospects for a satisfactory arrangement with the Coal miners have caused a better feeling, and while, of course, almost anything might happen before a definite settlement is made, yet there is a somewhat confident belief that there will be no strike. This would at once loosen up everything, and while, on the whole, it would be a bull card, yet in some respects it might be regarded otherwise. With an assured full supply of fuel production would have a free hand, and in that way the danger of a Pig Iron shortage would, in some measure, be eliminated. On the other hand, melters would also be able to get out heavy tonnages, so that one would pretty well offset the other, removing restrictions on both sides. So far there have been no difficulties on this score, but there have been apprehensions that they might develop serious consequences in case a strike did occur. In other words, what have been abnormal conditions for some weeks would give place to normal conditions. The present situation, however, is entirely satisfactory. There is plenty of work everywhere, the only drawback being that forward deliveries are not called for to any great extent. This is due partly to the fact that there has been some uncertainty in regard to prices, and also to the unsettled feeling in regard to fuel supplies, but if the latter becomes assured the former will no doubt take care of itself. If there is any change at all since last week it has been in the direction of improvement. Quoted rates are selling rates, and in some cases inside figures are not accepted unless the order is first class and for very satisfactory deliveries. For the present, however, recent quotations are still in force, although as we said before the undertone is stronger. For Philadelphia and nearby deliveries quotations are about as follows:

No. 1 X Foundry	$19.00 to $19.25
No. 2 X Foundry	18.25 to 18.50
No. 2 Plain	17.50 to 18.00
Standard Gray Forge	16.50 to 17.00
Basic, nominal at	17.75 to 18.00
Low Phosphorus	24.00 to 25.00
Bessemer	19.75 to 20.25
Malleable Iron	19.00 to 19.25

Steel Alloys.—Receipts are increasing and prices are assuming somewhat normal conditions, but it is difficult to quote exact prices, although those who can make prompt shipments have modified their views considerably. One sale of Ferromanganese is reported at less than $80 for the third quarter, and it is probable that similar reductions would be made on other descriptions if firm offers were made. On the other hand, needy buyers might have to pay smart premiums for deliveries during the second quarter.

Steel.—There is a heavy demand and there seems to be no difficulty in getting the figures recently ruling, except for Forging Billets, which are a trifle lower. Ordinary Open Hearth Steel is asked for in 300 to 500 ton lots, but the amounts taken are in almost all cases considerably larger.

Quotations are $29 to $29.50, delivered, for ordinary qualities, and $33 to $35 for Forging Billets.

Muck Bar.—In the absence of demand, prices are purely nominal at $28 to $29, f.o.b. sellers' mills.

Plates.—Deliveries are heavy, but are fully offset by new orders, so that the mills maintain their *status quo*. A considerable amount of business is held in abeyance, pending further information in regard to the threatened Coal strike, which if settled as expected will be the signal for the immediate placing of large orders. Prices are unchanged as last quoted—viz.:

	Carload. Cents.	Part carload. Cents.
Tank, Bridge and Boat Steel	1.73½	1.78½
Flange or Boiler Steel	1.83½	1.88½
Marine, A. B. M. A. and Commercial Fire Box Steel	1.93½	1.98½
Marine	2.13½	2.18½
Locomotive Fire Box Steel	2.23½	2.28½

The above are base prices for ¼-inch and heavier. The following extras apply:

	Extra per 100 pounds.
3-16-inch thick	$0.10
Nos. 7 and 8, B. W. G.	.15
No. 9, B. W. G.	.25
Plates over 100 to 110 inches	.05
Plates over 110 to 115 inches	.10
Plates over 115 to 120 inches	.15
Plates over 120 to 125 inches	.25
Plates over 125 to 130 inches	.50
Plates over 130 inches	1.00

Structural Material.—No material change has occurred in this department. There is plenty of business, but deliveries are not as backward as they were some time ago. Some orders are months behind, but in most cases business can be placed for deliveries within 60 to 90 days, while in others even better than that can be done under a little pressure. Prices are unchanged, as follows: Beams, Channels and Angles, 1.83½c. to 2c., delivered.

Bars.—The Bar Iron situation has not improved. There is probably a greater determination on the part of the larger mills to maintain prices, even if some of the others are disposed to cut. Those who make a full line of sizes see no use in following the lead of those who make only a few sizes, and inferior material at that. Hence, while bars can be bought at all sorts of prices, strictly Refined Bars are firm at 1.73½c. These mills have a great deal of business on their books and are getting good specifications, so that for the present they see no reason for changing their attitude. Steel Bars are nominally 1.63½c., but it is hard to get prompt deliveries without paying some little advance.

Sheets.—There is nothing of special importance in this department, and while orders do not appear to be very large, mills are fully employed without having to pile up stock. Prices are steady and unchanged, as follows: Nos. 18 to 20, 2.40c.; Nos. 22 to 24, 2.50c.; Nos. 25 and 26, 2.60c.; No. 27, 2.70c., and No. 28, 2.80c.

Old Material.—There has been a very decided change in the market for Scrap material. Those who would not consider propositions to buy two or three weeks ago are now taking considerable quantities at advancing prices, and appear to be willing to duplicate their purchases when the opportunity occurs. No. 1 Steel Scrap has sold at $16.50 to $16.75, but holders ask $17 and are quite firm in their views. Other descriptions of Scrap material are 25c. to 50c. per ton dearer. Bids and offers for deliveries in buyers' yards are about as follows:

Scrap Steel Rails and Crops	$17.00 to $17.25
No. 1 Steel Scrap	16.50 to 16.75
Low Phosphorus Scrap	21.00 to 22.00
Old Steel Axles	20.00 to 20.50
Old Iron Axles	25.00 to 26.50
Old Iron Rails	21.50 to 22.00
Old Car Wheels	17.00 to 17.25
Choice Scrap, R. R. No. 1 Wrought	19.50 to 20.50
No. 1 Yard Scrap	17.50 to 18.00
Long and Short	16.00 to 16.50
Machinery Scrap	15.50 to 16.00
Wrought Iron Pipe	14.50 to 15.00
No. 1 Forge Fire Scrap	15.50 to 16.00
No. 2 Light Ordinary	10.00 to 11.00
Wrought Turnings	13.75 to 14.25
Axle Turnings, Choice Heavy	14.50 to 15.00
Cast Borings	10.25 to 10.50
Stove Plates	12.00 to 12.50
Grate Bars	11.50 to 12.00

Addition to the Ryerson Warehouse.—The large structural warehouse of Joseph T. Ryerson & Son, Chicago, located at Sixteenth and Rockwell streets, will be doubled in capacity by the erection of a large building having three bays. The present warehouse is 240 feet long and 190 feet wide, and the new addition will increase the size of the warehouse to 500 feet in length. The storage capacity will be increased in the same proportion. The equipment for fitting material will also be enlarged. Two 10-ton cranes will be installed, and these with the five cranes now in operation will provide ample means to handle the material.

Pittsburgh.

PARK BUILDING, March 28, 1906.—(*By Telegraph.*)

Pig Iron.—We note a better inquiry, and while no large lots have been sold there have been quite a few sales of small lots of Basic, Malleable Bessemer and Standard Bessemer. The Bessemer Pig Iron Association has upward of 15,000 tons of Standard Bessemer for April delivery and it is very probable that the Steel Corporation will take this within the next week at $17.25, Valley furnace, negotiations being already under way. We note quite a few sales of Standard Bessemer for third quarter, including one of 500 tons and another of 3000 tons at $17.40, Valley furnace. We quote the market on Standard Bessemer for third quarter delivery at $17.25 for large lots such as the Steel Corporation buys and $17.40 to $17.50 for small lots. There have been several small sales of Standard Bessemer for April delivery at $17.50, Valley furnace. There is a good demand for Basic Iron for spot delivery, on which we quote $17 to $17.25, Valley furnace, the latter price being asked for April shipment. We also note sales of Malleable Bessemer at $17.25, Valley furnace. There is some sharp competition at present in Northern Foundry Iron between two leading interests and prices have been shaded materially. We quote Northern No. 2 Foundry at $17, Valley furnace, but in some cases this price has been shaded 25c. a ton or more. There is not much demand for Forge Iron, but we note a sale of 1000 tons for April and May delivery at $16.15, Valley furnace, or $17, Pittsburgh.

Steel.—Effective April 1, the Carnegie Steel Company has advanced its official prices on Billets and Sheet and Tin Bars $2 a ton, or from $25 to $27 for Billets and from $26 to $28 for Sheet and Tin Bars in random lengths, Cut Bars taking an extra of 50c. a ton. It is understood these prices will apply to all consumers having open contracts for Steel with the Carnegie Company, except possibly two or three who have sliding scale contracts based on the price of Bessemer Pig Iron. There is not much demand for Steel, most consumers being covered by regular contracts. We quote Forging Billets $32, Pittsburgh.

(*By Mail.*)

At this writing the question as to whether there will be a coal strike is still unsettled, but so far as the Pittsburgh district is concerned, it is believed that the miners employed by the Pittsburgh Coal Company will accept the offer of President Robbins of an advance of 5.5 per cent., effective April 1. We can note a considerably better inquiry for Pig Iron, and numerous sales of fair sized lots have been made. The United States Steel Corporation will probably buy upward of 15,000 tons of Bessemer Iron within a week from the Bessemer Pig Iron Association at $17.25, Valley furnace. This is all the Iron the Bessemer Association has for April delivery. There have been quite a few sales of Basic and Malleable Bessemer for April and May delivery, the Basic going at $17 to $17.25, and the Malleable Bessemer at $17.25, Valley furnace. Standard Bessemer is firm, on the basis of $17.50, Valley furnace. The market on Foundry Iron is weakened to some extent by competition between two of the leading interests to secure the relatively small tonnage that is wanted. While Northern No 2 Foundry Iron is quoted at $17 at furnace, in some cases $16.50 has been done. Last week the Carnegie Steel company advanced its official prices on Steel $2 a ton, which puts Bessemer and Open Hearth Billets at $27, and Sheet and Tin Bars made from Bessemer or Open Hearth at $28, Pittsburgh, for random lengths, freight to point of delivery being added. In Finished Material the demand in some lines, notably Iron and Steel Bars, Sheets and Tin Plate, is disappointing, but the tonnage being placed on Steel Rails and Structural Steel continues heavy. A meeting of the Steel Bar manufacturers is to be held here to-morrow (Wednesday) to discuss the matter of prices to the large Implement Makers, who are understood to be ready to place their season contracts for the year commencing July 1, providing they are granted concessions in prices which they ask, but which the makers will hardly see their way to grant. The Coke market is firmer, owing to the uncertainty as to whether there will be a coal strike, and we note a fairly large movement in Heavy Steel Scrap, several leading consumers having bought round lots.

Ferromanganese.—Prices for spot delivery depend largely on the necessity of the buyer. We hear of several carload lots for shop shipment having been sold at $140 to $145 per ton. For April and May delivery $105 to $110 is quoted, while for the last half of the year $85 to $90 is asked.

Muck Bar.—A sale of 1000 tons of standard grade Muck Bar, made from all Pig Iron, is reported at about $28, Pittsburgh. We quote nominally at $28 to $28.50. There is practically no business offering.

Steel Rails.—A heavy tonnage continues to be placed. Last week the Atchison, Topeka & Santa Fé bought 40,000 tons from the Pennsylvania Steel Company. A local road is in the market for upward of 10,000 tons, which will likely be placed this week. Altogether fully 100,000 tons have been placed since our last report, several of the trolley lines having bought considerable quantities. We quote Standard Sections at $28 at mill. There is not much inquiry for Light

Rails, which we quote as follows: 8-lb., $36; 10-lb., $32; 12-lb., $30; 16-lb., $29; 20-lb., $28.50; 25 to 45 lb., $27.50 to $28, maker's mill.

Rods.—A fair demand is noted for Rods, which are exceedingly scarce, the two leading makers not having been sellers in the open market for some time, needing their entire output of Rods for their own uses. We continue to quote Bessemer and Open Hearth Rods at $34 and Chain Rods at $35, Pittsburgh.

Skelp.—There is not much new business being placed, but the mills are busy on contracts. Prices are firm and we quote: Grooved Steel Skelp, 1.57½c. to 1.60c.; Sheared Steel Skelp, 1.60c. to 1.65c.; Grooved Iron Skelp, 1.65c. to 1.70c.; Sheared Iron Skelp, 1.75c. to 1.80c., Pittsburgh, these prices being for ordinary widths and gauges.

Structural Material.—Never before in the history of the Structural trade has there been as much business in sight as there is at the present time and some large contracts have been placed in the past week. The American Bridge Company has taken so far this month upward of 50,000 tons, while the McClintic-Marshall Construction Company has taken 2000 tons for bridge work for the Buffalo, Rochester and Pittsburgh and 4000 tons for a viaduct for the Erie Railroad at Moodna, Pa. The John Eichleay, Jr., Company has taken about 300 tons for the Thaw Building in this city. Work in sight includes the Steel for the widening of the Pittsburgh & Lake Erie bridge at Beaver, Pa., which will take upward of 4000 tons or more. All the Structural shops are turning out an enormous tonnage, the McClintic-Marshall Construction Company now fabricating about 8000 tons a month at its plant at Rankin, Pa., and about 3000 tons at its works at Pottstown, Pa. Deliveries of Structural Shapes from the mills are getting better. Prices are very firm and we quote: Beams and Channels, up to 15-inch, 1.70c.; over 15-inch, 1.80c.; Angles, 3 x 2 x ¼ inch thick up to 6 x 6 inches, 1.75c.; 8 x 8 and 7 x 3½ inches, 1.80c.; Zees, 3-inch and larger, 1.70c.; Tees, 3-inch and larger, 1.75c. Under the Steel Bar card Angles, Channels and Tees under 3-inch are 1.60c., base, for Bessemer and Open Hearth, subject to half extras on the Standard Steel Bar card.

Plates.—While the Plate mills are busy on contracts specifications on which are coming in fairly well, yet the amount of new work being placed is smaller. The Cambria Steel Company is now taking orders for its new Universal Plate mill, which will roll up to 24 inches wide, and which it expects to start about May 1. Prices, on the whole, are fairly strong, but there are quite a few outside mills that are prepared to furnish plates up to 72 inches wide, and occasionally these mills shade prices to the extent of about $1 a ton. We quote Tank Plates, ¼-inch thick, 6¼ up to 100 inches in width, 1.60c., base, at mills, Pittsburgh. Extras over the above prices are as follows:

	Extra per 100 pounds.
Gauges lighter than ¼-inch to and including 3-16-inch Plates on thin edge	$0.10
Gauges Nos. 7 and 8	.15
Gauge No. 9	.25
Plates over 100 to 110 inches	.05
Plates over 110 to 115 inches	.10
Plates over 115 to 120 inches	.15
Plates over 120 to 125 inches	.25
Plates over 125 to 130 inches	.50
Plates over 130 inches	1.00
All sketches (excepting straight taper Plates varying not more than 4 inches in width at ends, narrowest end being not less than 30 inches)	.10
Complete Circles	.20
Boiler and Flange Steel Plates	.10
"A. B. M. A." and ordinary Fire Box Steel Plates	.20
Still Bottom Steel	.30
Marine Steel	.40

Shell Grade of Steel is abandoned.

TERMS.—Net cash 30 days. For anticipated payments a maximum discount may be allowed at the rate of 6 per cent. per annum and for a longer time than 30 days interest shall be charged at the same rate per annum. Invoices paid within ten days from date thereof, discount of ½ of 1 per cent. is allowable. Pacific Coast base, 1.60c., f.o.b. Pittsburgh, with all rail tariff rate of freight to destination added, no reduction for rectangular shapes 14 inches wide down to 6 inches of Tank, Ship or Bridge quality.

Sheets.—Generally speaking, the Sheet market is in satisfactory condition, and while the amount of new business being placed is only fairly heavy, yet the mills are filled up on contracts to July 1 or longer. There is some unevenness in prices, notably among the large jobbers, who have heavy stocks bought when prices were considerably lower than they are now. There is still trouble in getting prompt deliveries of Sheet Bars, and this does not promise to be remedied for some time. A meeting of the independent Sheet manufacturers was held here to-day to discuss wages, as it will not be long until conferences will be held with the Amalgamated Association on the Sheet scale for the year beginning July 1. Aside from the unevenness in prices noted above and which is largely confined to the jobbers, the market is fairly strong, and we quote: Black Sheets, Box Annealed, one pass through cold rolls, Nos. 10 to 12 gauge, 1.95c. to 2c.; Nos. 13 and 14, 2c. to 2.05c.; Nos. 15 and 16, 2.05c. to 2.10c.; Nos. 17 to 21, 2.10c. to 2.15c.; Nos. 22 to 24, 2.15c. to 2.20c.; Nos. 25 and 26, 2.20c. to 2.25c.; No. 27, 2.25c. to 2.30c.; No. 28, 2.35c. to 2.40c.; No. 29, 2.50c. to 2.55c., and No. 30, 2.60c. to 2.65c. We quote Galvanized Sheets as follows: Nos. 10 and 11, 2.30c. to 2.35c.; Nos. 12 to 14, 2.40c. to 2.45c.; Nos. 15 and 16, 2.50c. to 2.55c.; Nos. 17 to 21, 2.65c. to 2.70c.; Nos. 22 to 24, 2.80c. to 2.85c.; Nos. 25 and 26, 3c. to 3.05c.; No. 27, 3.20c. to 3.25c.; No. 28, 3.40c. to 3.45c.; No. 29, 3.65c. to 3.70c., and No. 30, 3.90c. to 3.95c. We quote No 28 Gauge Painted Roofing Sheets at $1.60 to $1.65 per square, and Galvanized Roofing Sheets, No. 28 gauge, at $2.95 to $3 per square for 2½-inch corrugations. These prices are for carload lots, jobbers charging the usual advances for small lots from store.

Bars.—An important meeting of the Steel Bar manufacturers is to be held in the Union Club to-morrow, at which will come up the question of prices to be named to the large Implement makers, who are said to be ready to place their season contracts for the year commencing July 1. On account of the scarcity and high prices ruling for both Bessemer and Open Hearth Billets, it seems very doubtful whether the mills will agree to make the reduction in prices asked for by these large consumers. If the mills refuse to make any concessions it is not improbable that the Implement makers will hold off placing their season contracts until the market has been thoroughly tested. A fair amount of new tonnage is being placed in both Iron and Steel Bars, but the mills are working mostly on old contracts on which buyers are specifying freely, and on which the mills are still considerably behind in deliveries. For Steel Bars rolled from Open Hearth stock, some mills, notably Cambria Steel Company, are asking a premium. We quote Refined Iron Bars at 1.60c. to 1.65c., Pittsburgh, the lower price being absolute minimum of the market and made only on very desirable orders and sizes. We quote Steel Bars at 1.50c., base, half extras, for carloads and larger lots.

Hoops and Bands.—New tonnage being placed is very light, but the mills are busy on contracts, on which buyers are specifying freely. We quote Steel Hoops at 1.90c., and Bands for all purposes at 1.50c., base, half extras as per Standard Steel card. These prices are for carload lots, f.o.b. Pittsburgh, plus full tariff rail rate to point of delivery, an advance of $2 a ton being charged for less than carloads.

Tin Plate.—Practically no new business is being placed, but the leading Tin Plate mills are very busy on contracts which will take the greater part of their output up to July 1. We quote Tin Plate at $3.50 per base box, f.o.b. Pittsburgh, for 14 x 20 100-lb. Cokes, terms 30 days, less 2 per cent. off for cash in ten days, on which price a rebate of 5c. a box is allowed for carloads and larger lots.

Merchant Steel.—Nothing has yet been done between the Implement makers and the mills on season contracts for Steel Bars, and much will depend on the action taken in regard to prices at the meeting to be held in this city to-morrow. Specifications on contracts are coming to the mills in large volume, and on certain sizes the mills are still very much behind in shipments. Prices are unchanged, as follows: Planished or Smooth Finished Tire Steel, 1.70c.; Iron Finish up to 1½ x ½ inch, 1.65c., and Iron Finish, 1½ x ½ inch and larger, 1.50c., base, Pittsburgh, and Channels for solid rubber tire are quoted as follows: ¾, ⅞ and 1 inch, 2c., and 1⅛-inch and larger, 1.90c.; Toe Calk Steel, 2c., to 2.05c.; Railway Spring Steel, 1.65c. to 1.70c; Cutter Shoes, 2.20c. to 2.25c.; Flat Sleigh Shoe, 1.50c. to 1.55c.; Crucible Tool Steel, 6c. to 8c. for ordinary grades and 12c. and upward for special grades. We quote Cold Rolled Shafting at 50 per cent. discount in carloads and 45 per cent. in less than carloads, delivered in base territory.

Railroad Spikes.—The market is very firm and a fair amount of new tonnage is being placed. We quote $2 to $2.05 per 100 lbs., f.o.b. Pittsburgh.

Spelter.—The market is firmer and the demand is also better. We quote prime grades of Western Spelter at 6.10c., St. Louis, equal to 6.22½c., Pittsburgh.

Merchant Pipe.—The mills are having a seasonable demand for the Merchant sizes and have a good deal of tonnage on their books. The National Tube Company has recently furnished about 40 miles of 10-inch Line Pipe to the United Gas Improvement Company for extensions of its lines near Philadelphia. Several very important gas lines are in the market, but they have not gone far enough to be referred to in this report. Prices continue low, the extreme discount on Merchant sizes remaining at 81 per cent., to the large trade. Official discounts are as follows:

Merchant Pipe.

	Jobbers, carloads.			
	Steel.		Iron.	
	Black.	Galv.	Black.	Galv.
	%	%	%	%
⅛ and ¼ inch	72	58	69	53
⅜ inch	74	60	71	57
½ inch	76	64	73	61
¾ to 6 inches	80	70	77½	67½
7 to 12 inches	75	60	72½	57
Extra strong, plain ends:				
⅛ to ⅜ inch	65	53	62	50
½ to 4 inches	72	60	69	57
4½ to 8 inches	68	56	65	53
Double extra strong, plain ends:				
½ to 8 inches	61	50	58	47

Discounts to consumers in small lots are one point higher than above.

Boiler Tubes.—As noted in this report last week, the demand for Locomotive Tubes is very heavy, and on these the mills are behind in delivery. There is very little doing in Merchant Tubes, as this is the off season. Discounts are as follows:

Boiler Tubes.

	Iron.	Steel.
1 to 1½ inches	41	46
1¾ to 2¼ inches	41	58
2½ inches	46	60
2¾ to 5 inches	53	66
6 to 13 inches	41	58

Iron and Steel Scrap.—The very low prices ruling in this market for some weeks past on Heavy Steel Scrap have resulted in several large consumers coming in the market and placing contracts for upward of 10,000 tons on the basis of about $14.50, Pittsburgh, or slightly lower. Where actual sales are made sellers usually have to allow concessions in prices. Dealers are quoting about as follows: Heavy Melting Scrap, $14.50 to $14.75; Bundled Sheet Scrap, $13.50 to $13.75. There is no market here for Wrought Scrap, dealers quoting about $16.50 to $16.75, Youngstown, for it. Old Steel Rails, short pieces, are $14.50 to $14.75; long pieces, for rerolling, $15.75 to $16; Cast Iron Borings are weak at $9; Machinery Cast Scrap, $15.25 to $15.50; Old Car Wheels, $17.75 to $18. All the above prices unless otherwise stated are for gross tons, f.o.b. Pittsburgh.

Coke.—We can note a firmer market on Coke, due entirely to the uncertainty as to whether there will be a Coal strike. The Coke regions are piled full of Coke and there is no trouble to get it promptly, providing consumers are willing to pay the higher prices asked by the operators. We note sales of considerable tonnage of strictly Connellsville Furnace Coke at prices ranging from $2.30 to $2.45 per ton at oven, the latter price probably more correctly representing the market at this writing. For strictly Connellsville 72-hour Foundry Coke for prompt delivery, from $2.90 to $3.25 per ton at oven is quoted. The output of Coke continues enormous, running about 380,000 tons per week in the Upper and Lower Connellsville regions.

Cleveland.

CLEVELAND, OHIO, March 27, 1906.

Iron Ore.—The Ore situation on the lakes is dependent now upon labor developments in the next few weeks. Reports have come that the Soo is still blocked with ice as it is in midwinter and there is no hope of an immediate opening of navigation through the removal of natural obstacles. It is now virtually accepted in trade circles here that a Soft Coal strike is inevitable. All consumers have tremendous stocks of Coal on hand and a tie up for six weeks or two months is the only thing that will remove the glut of the market. The lake vessel owners see that they will have little opportunity to ship Coal early in the season, leaving them dependent upon the Ore trade for cargoes. Should the lake season open early, with all labor difficulties settled, the rush of tonnage in the Ore trade would naturally and easily bring about a rapid decline in the freight rate on Ore. The dock managers and the longshoremen have not yet come together for another conference and they will not be able to do so before the first week in April or probably as late as April 10. The Lake Carriers' Association is still disposed to refuse recognition to the masters' and pilots' organization and a tie up of the lakes for a month or six weeks seems imminent. The rapid consumption of Ore at the furnaces gives an indication that the supplies on Lake Erie docks are rapidly coming to the point where they will need replenishing. It is doubted if any marked inconvenience could come to the furnaces, however, before July 1 in case the movement of new Ore was blocked.

Pig Iron.—Many Pig Iron buyers are holding off until the issue of the pending Coal conferences is known. In Foundry Iron buying during the past week has been very light. For a while consumers showed a disposition to contract for their supply for the third quarter, but this has disappeared almost completely in the past week and the market is again quiet, with sales confined to needs for immediate consumption. These are light. The market, in view of the small buying, is nominal. The quotation of $17 for No. 2 is permissible, because most of the recent sales have been made on that basis at the Valley furnace. Active buying is not expected until after the definite declaration of a Coal strike and a decision as to labor difficulties on the lakes. Then it is believed that the possibility of a restriction of the supply of Ore and of a curtailment of the supply of Pig Iron will induce some precautionary buying. The Bessemer and Basic markets are in the same position, with the feeling easy and the buying confined to temporary needs almost entirely. Coke prices are a little stronger. The Coke region mines will not be affected, since they are unorganized, but the sympathetic effect on the market is to stiffen prices. The best grades of 72-hour Foundry Coke are selling at $3.15 to $3.25 at the oven, with Furnace Coke selling at $2.50 to $2.75 at the oven. None of the consumers is reported as having laid in any stock against the possibility of a strike. The only possible additional drain on that market would come from a demand by Eastern furnaces depending heretofore upon Hard Coal; but it is understood the Anthracite supply is adequate for all needs.

Finished Iron and Steel.—The key to the situation in several lines at present seems to rest in the Billet market. It is now understood that the supply is no where near adequate to the demand, and reports have come that producers having new productive capacity in rolling mill products are shutting down some of their older styled mills that the Billets may be used in the more modern plants. The supply will not keep all of the mills in operation. This is especially true of the Steel Corporation mills in the Pittsburgh territory, where it is reported some of the wire mills have been closed. The scramble for Forging Billets in this immediate territory continues, with the supply limited. Forging Billets sell at $35, deliverd in Cleveland, while Bessemer Rerolling Billets are selling at $28 to $29, Pittsburgh. The Structural trade is still strong, with the demand steady. Consumers are not willing to contract ahead in any such volume as was seen a year ago, but it is evident, nevertheless. that a number are placing contracts. Trade in material for immediate use is good, and some of the Eastern mills are selling Structural Shapes in this territory at a premium of about $5. Orders of this sort run about 200 to 500 tons. Some consumers show an increasing willingness to contract for Plates, but the mills prefer spot business. The market is strong at 1.60c., Pittsburgh. Bar Iron continues weak, with a slow demand and large production. Most mills in this territory are filled until July, but others are seeking business and are quoting 1.70c., Youngstown, with that price shaded on good orders. Bar Steel is strong at 1.50c., Pittsburgh, for Bessemer and Open Hearth. Sheets are strong, with good buying out of stock at 2.15c for No. 10 Black, 2.70c. for No. 28 One Pass Cold Rolled and 3.70c. for No. 28 Galvanized.

Old Material.—The market has been dull in Scrap for the past week, and while some buying is seen it is more in the nature of bargain counter sales, brought about by the desires of some dealers to unload even at a sacrifice. Prices hold about as they have been. The following are dealers' quotations to the trade, gross tons, f.o.b. Cleveland: Old Steel Rails, $14.50 to $15.50; Old Iron Rails (nominal), $22 to $23; Iron Car Axles, $17.50 to $18.50; Heavy Melting Steel, $14 to $15. Net tons: Cast Borings, $8.50 to $9; No. 1 Busheling, $12.50 to $13.50; No. 1 Railroad Wrought, $15 to $16; No. 1 Cast, $13.50 to $14.50; Stove Plate, $11; Iron and Steel Turnings and Drillings, $10 to $11.

Birmingham.

BIRMINGHAM, ALA., March 26, 1906.

Pig Iron.—The situation this week appears but a reflex of last so far as market conditions are concerned, and it would almost seem like two contestants drawn off to breathe while fencing for an advantage. That the producers still have the situation in hand is asserted, despite the fact that there is a marked hesitancy on the part of buyers and that quotations have been openly made by some of the smaller interests and by holders of warrant Iron below those still being put out by the larger producers. These larger producers are continuing to demand $14.50, Birmingham, for No. 2 Foundry, and that they appear confident of their ability to control the situation is evidenced by the fact that they are displaying little or no anxiety to sell. It is intimated that the warrant Iron in this district will soon be out of the way, and it appears that the producing capacity which is disposed to make concessions in price is not considered sufficient to control the situation long. It is further believed that a buying movement will shortly set in at prices which are being demanded now by the larger producers. It is admitted that Iron can be bought for early delivery at $14, Birmingham, and that in some instances this price could be shaved, but just what proportion of the producing capacity this covers it is impossible to estimate. Production appears to be gradually falling below the normal, and the reduction of the large stocks which were on the yards of nearly all of the furnaces some months ago appears almost marvelous. Many of the furnaces today are loading all their Iron from the cast shed, while their yards are practically bare.

Old Material.—Our quotations of last week covering Scrap Material should remain practically unchanged. The dealers are waiting for the benefits of the buying movement which the Pig Iron producers seem to consider imminent, and while stocks are unusually large they all seem disposed to carry them in expectation of a good demand which will enable them at least to hold the present price. The following seem to be the prevailing prices per gross ton, f.o.b. cars here, though on some grades in little demand the price quoted could probably be shaded slightly:

Old Iron Rails	$17.50 to $18.00
Old Iron Axles	18.00 to 18.50
Old Steel Axles	16.00 to 17.00
Old Car Wheels	16.00 to 16.50
No. 1 Railroad Wrought	15.00 to 15.50
No. 2 Railroad Wrought	14.50 to 15.00
No. 1 Country Wrought	13.50 to 14.00
No. 2 Country Wrought	11.50 to 12.00
Wrought Pipes and Flues	11.50 to 12.00
Railroad Malleable	11.50 to 12.00
Mixed Steel	9.50 to 10.00
No. 1 Machinery Cast	10.75 to 11.25
Stove Plate and Light Cast	8.75 to 9.00

An event considered of great portent to the Birmingham district was the arrival here of John W. Gates, the leader of the new interests in control of the Tennessee Coal, Iron & Railroad Company and the Republic Iron & Steel Company, accompanied by directors of the two companies and several expert engineers in various lines. An interview was sought with Mr. Gates, but he declined to be interviewed touching the plans for development which the new interests have under consideration. The visitors, in company with the local officials of the two companies, inspected all of the important plants and mines under their control, and that they contemplate vast development and expansion is generally conceded.

Cincinnati.

FIFTH AND MAIN STS., March 27, 1906.—(*By Telegraph.*)

Pig Iron.—The aggregate of the week's sales has been light. Apparently but a very small percentage of consumers will require any Iron until later in the year. The usual amount of quick delivery sales is in evidence, but these are almost invariably of small tonnage. Just what the next 30 days will develop is mere conjecture. Of course a number of round lot sales would have a very stimulating effect and prices would then be placed on a firmer basis than exists to-day. Conditions are such that it is a difficult proposition to analyze them and state the exact truth. It does look, however, as though it would be several weeks before the atmosphere would be sufficiently clear to enable both buyers and sellers fully to understand each other and the market again assume normal conditions. Prices as scheduled for both Northern and Southern brands are said to have been shaded in a number of instances and the figures given are therefore somewhat elastic. To sum up the matter as we understand it is simply this—that consumers have enough Iron for present needs, having bought considerably more during the fall and winter than was anticipated, while the furnaces as a rule have comparatively little to offer. Freight rates from the Hanging Rock district to Cincinnati are $1.15, and from Birmingham $3. We quote f.o.b. Cincinnati, as follows:

Southern Coke, No. 1	$17.00 to $17.50
Southern Coke, No. 2	16.50 to 17.00
Southern Coke, No. 3	16.00 to 16.50
Southern Coke, No. 4	15.25 to 15.75
Southern Coke, No. 1 Soft	17.00 to 17.50
Southern Coke, No. 2 Soft	16.50 to 17.00
Southern Coke, Gray Forge	14.75 to 15.25
Southern Coke, Mottled	14.50 to 15.00
Ohio Silvery, No. 1 (8 per cent. Silicon)	21.65 to 22.15
Lake Superior Coke, No. 1	18.15 to 18.65
Lake Superior Coke, No. 2	17.65 to 18.15
Lake Superior Coke, No. 3	17.15 to 17.65
Car Wheel Irons.	
Standard Southern Car Wheel	$23.50 to $24.00
Lake Superior Car Wheel	22.00 to 22.50

Coke.—The market is fairly strong and the demand is good. The agitation of the proposed strike among the miners is no doubt responsible for this increased demand, consumers as a rule having bought for future emergency. We quote the best brands of Foundry Coke from Connelsville and Virginia districts from $2.85 to $3.10, f.o.b. ovens.

Finished Iron and Steel.—New business is keeping up in a remarkable manner and the mills have all they can do. Structural lines are showing continued activity, and the Rail trade is exceptionally good. We quote, f.o.b. Cincinnati, as follows: Iron Bars, in carload lots, 1.75c., with half extras; the same, in smaller lots, 2c., with full extras; Steel Bars, in carload lots, 1.63c., with half extras; the same, in small lots, 1.85c., with full extras; Base Angles, 1.83c., in carload lots; Beams and Channels, in carload lots, 1.83c.; Plates, ¼-inch and heavier, 1.73c., in carload lots; in smaller lots, 1.90c.; Sheets, 16-gauge, in carload lots, 2.15c.; in smaller lots, 2.70c.; 14-gauge, in carload lots, 2.05c.; in smaller lots, 2.60c.; Steel Tire, 1 x ¼ inch or heavier, 1.83c., in carload lots.

Old Material.—Trade is a little better than it was last week and dealers feel encouraged with the outlook. Prices, so far as obtainable, are unchanged. We quote dealers' prices, f.o.b. Cincinnati, as follows: No. 1 Railroad Wrought Scrap, $15 to $15.50 per net ton; Cast Borings, $8.50 to $9 per net ton; No. 1 Cast Scrap, $12 to $13 per net ton; Iron Rails, $22 to $22.50 per gross ton; Steel Rails, rolling mill lengths, $15 to $16 per gross ton; Relaying Rails, 56 lbs. and upward, $28 to $29 per gross ton; Iron Axles, $24 to $24.50 per net ton; Car Wheels, $18.50 to $19.50 per gross ton; Low Phosphorus Scrap, $18 to $19 per gross ton.

The Lookout Mountain Furnace at Battelle, Ala., which recently was placed in the hands of a receiver, has been blown out indefinitely. Just what the arrangements are have not been disclosed, but it is quite likely that matters will assume some shape within the next week or two.

Victoria Furnace at Goshen, Va., is now blowing out, presumably for repairs, which will consume some weeks.

E. M. Lea, who has been purchasing agent for the Bullock Electric Company, has resigned to go with the Ferro Concrete Construction Company, with headquarters in this city. He will be succeeded by L. L. Tatum.

New York.

NEW YORK, March 28, 1906.

Pig Iron.—There have been a fair number of moderate sized sales during the week, the majority at recently ruling prices. There are still indications, however, of concessions, notably on the lower grades and the less well-known brands. In New England interior points New York State furnaces are selling at $18.25 to $18.50, delivered, which shows some weakness. We quote as follows, tidewater: No. 1 Foundry, $18.50 to $18.75; No. 2 Foundry, $18 to $18.25; No. 2 Plain, $17.25 to $17.50. Southern Iron is quoted at $18.25 to $18.50 for No. 1 Foundry and $17.75 to $18 for No. 2 Foundry.

Steel Rails.—Orders are coming to the mills in such volume that it is already a problem with most mills to arrange for further deliveries in 1906. This will be without doubt the greatest Rail year the trade has known. In the past week more than 100,000 tons of Rails have been bought for domestic delivery, the largest contract being that of the Atchison, Topeka & Santa Fé for 60,000 tons, which may be increased to 70,000 tons. The previous purchases of this road were 57,000 tons. The Copper River & Northwestern Railroad, an Alaskan line, has bought 4000 tons; the Chesapeake & Ohio, 10,000 tons, and the Georgia Central, 10,000 tons additional. For the San José & Santa Clara 1000 tons were bought. The Light Rail trade has been heavy, the result in part of the stimulation of the Coal trade in anticipation of a strike.

Structural Material.—While large contracts are not reported, there has been a steady placing of orders for bridges and buildings in the past week. The American Bridge Company has put on its books this month 54,000 tons so far and the record of March will undoubtedly pass 60,000 tons. Among railroad business pending in the East are a number of bridges for the Lehigh Valley Railroad, which will take altogether about 7000 tons of Steel. The Western Maryland Railroad placed a number of Plate Girder bridges in the past week, requiring about 600 tons of Steel. The business went to the Pennsylvania Steel Company. The Passaic Steel Company, Paterson, N. J., has taken the contract for the Structural Steel work for the *Evening Post* Building, 20 to 24 Vesey street, New York. The Pacific Coast has placed considerable business in the last two months and has still a number of important projects pending, a building in San Francisco, requiring 4900 tons, having been bid on recently and one in Los Angeles calling for 2200 tons. Dealers and fabricators have been placing orders for material that will be needed in the second half of the year, but the buying is only moderate so far. Buyers from New York stocks are paying 2.40c. to 2.50c., as heretofore. On deliveries from mills we quote, f.o.b. New York, as follows: Beams, Channels, Angles and Zees, 1.84½c.; Tees, 1.89½c.; Bulb, Angles and Deck Beams, 1.99½c. Beams, 18 to 24 inch, 0.10c. extra; Angles over 6 inches 0.10c. extra.

Bars.—The market is still very quiet, with both Bar Iron and Steel Bars quoted at 1.64½c. to 1.74½c., tidewater, according to specifications, quantity, time of delivery, &c.

Plates.—Local transactions are fair, with sales in some cases running up to 300 tons or more. The demand is confined to the immediate wants of consumers, no disposition being shown at present to make contracts for future delivery. The Eastern mills are still running full on old business and specifications are being very freely made against contracts. Prices are firm and quotations are continued, as follows, at tidewater: Sheared Tank Plates, 1.74½c. to 1.84½c.; Flange Plates, 1.84½c. to 1.94½c.; Marine Plates, 2.14½c. to 2.24½c.; Fire Box Plates, 2.24½c. to 2.60c., according to specifications.

Cast Iron Pipe.—A great deal of work is now ready for bids. To-day the city of Boston will place contracts for 3500 tons of all sizes. The Department of Water Supply, New York, will open bids April 4 for 24,000 tons, principally 48-inch, and 1200 tons of specials. The city of Orange, N. J., will place contracts April 9 for 2000 tons of 20-inch. It is now stated that the city of Philadelphia will shortly be in the market for at least 20,000 tons of large sizes and may perhaps place orders for 25,000 tons. The Pipe foundries are very well supplied with work at present, and with the new business coming up it looks as though the summer demand may be greater than the available capacity. Prices are very firm at $30.50 per net ton for carload lots of 6-inch at tidewater.

Old Material.—Embargoes on all eastern Pennsylvania points have been lifted, and shipments are being made in considerable volume to the works which had been so long affected. The demand for Steel Scrap is heavy. This is partly due to the efforts made to cover by those who sold for future delivery some time ago, without having the stock on hand to fill such contracts. It is stated that more Steel Scrap has been sold since last report than during any week since the middle of November. Some large lots have changed hands at prices equal to $16.25 to $16.50, eastern Pennsylvania. These prices were realized on heavy miscellaneous Steel Scrap, but Crop Ends and Old Steel Rails are bringing a trifle more money. It is further stated that more rolling mill material was sold the past week than in any week since January 1. The demand for Wrought Pipe has materially increased, and two or three lots have been sold, aggregating about 800 tons. The price realized on this class of stock is about $1.50 lower than in November. Some considerable quantity of Wrought and Soft Steel Turnings has been taken by consumers. Cast Borings are considered to be about the most attractive class of material at the present time, and several large lots have been sold at full prices. Old Car Wheels and Cast Scrap are still in good demand. The heavy demand for new Rails is having a stimulating effect on the market for Relaying Rails. Leading dealers give as their opinion that from present indications, particularly if the Coal strike should not prove serious, there will be a reasonably good demand for Old Material during the spring and summer months. While it is quite generally felt that there will be no decided advance in prices, at the same time it would not take very much buying to make a marked change for the better. Approximate prices per gross ton for New York or vicinity are as follows:

Old Iron Rails	$20.00 to $21.00
Relaying Rails	25.50 to 26.50
Old Steel Rails, rerolling lengths	16.50 to 17.50
Old Steel Rails, short pieces	15.00 to 16.00
Heavy Melting Steel Scrap	15.00 to 16.00
Standard Hammered Iron Car Axles	24.50 to 25.50
Old Steel Car Axles	20.00 to 21.00
No. 1 Railroad Wrought	19.00 to 20.00
Iron Track Scrap	16.50 to 17.50
No. 1 Yard Wrought, long	16.50 to 17.00
No. 1 Yard Wrought, short	15.00 to 15.50
Wrought Pipe	13.50 to 14.50
Light Iron	10.00 to 10.50
Cast Borings	9.25 to 9.75
Wrought Turnings	12.50 to 13.50
Old Car Wheels	17.50 to 18.00
No. 1 Machinery Cast	15.50 to 16.00
Stove Plate	11.50 to 12.00
Grate Bars	10.00 to 10.50
Malleable Cast	16.50 to 17.50

Metal Market.

NEW YORK, March 28, 1906.

Pig Tin.—The highest price ever recorded for 5-ton lots of Straits Tin was obtained to-day, when Tin was sold at 37.45c. There was a fairly active trade at this figure. Previous sales during the week were made at 37c. to 37.10c. During the time of the French Syndicate Tin sold at 37c. Good business has been done in nearby arrivals, and it is reported that nearly 800 tons of Tin, ex-steamship Coulsdon, have been sold to the American Sheet & Tin Plate Company. This steamer, to which reference has previously been made regarding her belated arrival, is now scheduled to arrive in New York April 7. The Minnehaha, arriving here April 2, brings a surprisingly small cargo, amounting to but 175 tons. Most of this Tin is already sold, as was also the case with the cargo on the Mesaba, which carried 480 tons. From indications it appears that there will be a shortage of Tin for some time to come. The public auction sale of Banca Tin took place in Rotterdam to-day and went at 37.35c., c.i.f. New York. The January sale went at but 0.15c. lower when the London market was £2 lower. To-day's sale amounted to approximately 1400 tons. The London market is very firm at £168 5s. for spot and £166 7s. 6d. for futures. The arrivals so far this month aggregate 2013 tons and the afloats 2745 tons.

Copper.—A heavy business has been transacted during the week following good sales for the entire month of March. Some of the sellers of Copper are now said to be without any supply. While present prices are approximately unchanged at 18.62½c. to 18.75c. for Lake, 18.25c. to 18.50c. for Electrolytic and 18.12½c. to 18.25c. for Casting Grades, delivery 30 days, it is extremely probable that higher quotations will be seen before the end of the week. The consumers of Copper have booked an enormous business, and must have metal to supply these demands; consequently they have entered the market and purchased heavily. Whatever accumulation of the metal there is is in the hands of the refiners awaiting treatment, and this is being expedited as much as possible. The London market has had a sharp advance, and for standard warrants £84 5s. is quoted for spot and £81 15s. for futures, while Best Select is held at £87 10s. To-day's business has been heavy, amounting to 1200 tons. While some reports credit a large house with engineering a corner in that market, it is stated that these high prices are simply the result of market operations, and it would not be surprising if quotations would reach still higher figures. The exports are small, aggregating but 13,936 tons so far this month.

Pig Lead.—The market is very quiet and a trifle easier, as soft Missouri brands can now be purchased at prices equal to those for Desilverized. In New York the spot market is quoted at 5.35c. to 5.45c. The American Smelting & Refining Company continues to quote shipment Lead in 50-ton lots at 5.35c. In St. Louis the market is unchanged at 5.27½c. The London price is slightly higher at £15 17s. 6d.

Spelter.—The market is very dull and prices are slightly easier. In St. Louis 6.05c. is quoted. For spot March and April shipment 6.15c. to 6.25c. is quoted. In London the price is unchanged at £24 15s.

Aluminum.—The price is nominally unchanged at 35c. for No. 1 Ingots, and No. 2 Ingots 33c. Since the Pittsburgh Reduction Company is practically out of the market and no supplies can be obtained from Europe purchases must be largely made through second hands at advances above these quotations.

Antimony.—The market is very strong, Cookson's and Hallett's being quoted at 17c. to 18c.; other grades at 16.50c. to 17.50c.

Quicksilver.—Prices are unchanged and for jobbing lots of 100 flasks of 75 lbs. each $41 is quoted. In San Francisco export shipments are held at $39 per flask; domestic shipments at $40.

Nickel.—Prices are unchanged at 40c. to 45c. for ton lots; 50c. to 60c. for smaller quantities.

Tin Plates.—Aside from an advance amounting to approximately 40c. per box in the price of Bright Charcoal Plates, due to the advance in the price of Pig Tin, the market is unchanged. For 100-lb. Bessemer IC Coke Plates, f.o.b. Pittsburgh, $3.50 is quoted; f.o.b. New York, $3.69. In Swansea Welsh Plates are 1½d. higher at 12s. 4½d., due to the advance in the price of Pig Tin.

Old Metals.—The market is slightly firmer, due to an advance in the price of Ingot Copper, and holders of Old Copper are asking higher prices for their supplies. There does not seem to be any accumulation of stock, and holders are in a position to market their product promptly. We revise dealers' selling quotations as follows:

	Cents.
Copper, Heavy Cut and Crucible	17.75 to 18.00
Copper, Heavy and Wire	17.25 to 17.50
Copper, Light and Bottoms	15.50 to 16.00
Brass, Heavy	11.75 to 12.00
Brass, Light	10.00 to 10.25
Heavy Machinery Composition	15.50 to 15.75
Clean Brass Turnings	10.25 to 10.75
Composition Turnings	13.00 to 13.25
Lead, Heavy	5.00 to 5.15
Tea Lead	4.85 to 4.90
Zinc Scrap	4.90 to 5.10

Iron and Industrial Stocks.

NEW YORK, March 28, 1906.

The stock market during the past week has fluctuated from day to day, according to the varying news from Indianapolis regarding the probabilities of a coal strike. In the main, however, the trend was upward. Taking the period from Thursday of last week to and including Tuesday of this week, the lowest prices realized were generally on Thursday, and the range of transactions in active stocks was as follows: Car & Foundry common 41 to 43; Locomotive common 67½ to 69½; Steel Foundries preferred 45 to 46; Colorado Fuel 61 to 64⅝; Pressed Steel common 51½ to 53; Republic preferred 99½ to 101; Sloss-Sheffield common 78 to 83; Steel common 39⅛ to 40⅞, preferred 105 to 106½. A few stocks showed a recession, the most conspicuous among these being Tennessee Coal, which sold at 149½ on Thursday and at 146 on Monday. Most stocks advanced sharply to-day. Last transactions up to 1.30 p.m. were reported as follows: Can common 9¼, preferred 66½; Car & Foundry common 43¾, preferred 101⅛; Locomotive common 69⅛, preferred 115½; Steel Foundries common 12¼, preferred 45½; Colorado Fuel 66½; Railway Spring common 56; Republic common 30¾, preferred 102¾; Sloss-Sheffield common 83⅞; Tennessee Coal 147⅜; United States Cast Iron Pipe 47⅛, preferred 92; United States Steel common 40⅞, preferred 106¼.

Southern Steel Company.—Kean, Van Cortlandt & Co., New York, are offering at 94 and interest $3,000,000 first mortgage sinking fund 5 per cent. gold bonds, dated December 15, 1905, and due November 1, 1930, but redeemable on any interest day at 105 and interest. The circular says: "No dividend shall be declared on the preferred stock before January 1, 1908, thereby assuring to the company a large additional sum from earnings, and no dividend can ever be declared on the preferred or common stock whereby the working capital would be reduced below $1,000,000." It is stated that the proceeds from the sale of the bonds will be used to retire $750,000 bonds now outstanding, pay off all floating debt, furnish ample working capital, increase the open hearth steel capacity 50 per cent, build ad-

ditional coke ovens to fully supply the company's needs, develop the coal properties so as to enable it to sell a large amount in the open market, and make other additions and betterments which will materially increase the revenue. The real estate at Gadsden embraces 230 acres, on which the company owns and operates a plant which consists of a modern blast furnace, daily capacity 300 tons of pig iron; four 50-ton open hearth steel furnaces, and a 36-inch blooming mill, daily capacity from 1000 to 1200 tons of steel billets, blooms or slabs. The real estate at Birmingham comprises 20 acres, on which is located a plant for the manufacture of small billets, wire rods, plain market wire, galvanized wire, wire nails, barb wire and woven wire fencing; total daily capacity, 300 tons of finished product. The company owns two tracts of coal lands, aggregating over 6000 acres, estimated by experts to contain over 90,000,000 tons of coal, and over 5000 acres of ore lands, estimated to contain between 40,000,000 and 50,000,000 tons of iron ore.

Struthers Coal and Coke Company.—In connection with the issue of $500,000 first mortgage 6 per cent. sinking fund bonds, dated July 1, 1905, by the Struthers Coal & Coke Company a circular gives the following information: These bonds are first lien on 280 acres of coking coal in the Klondike region (Fayette County, Pa.), 160 coke ovens erected thereon and equipment to cost $250,000, and are guaranteed as to principal and interest by the Struthers Furnace Company, Struthers, Ohio. Sinking fund for the redemption of bonds 25 cents per ton for each ton of run of mine coal taken out of the mortgaged premises, but not to be less than $25,000 per annum. The company was incorporated in June, 1905, with $500,000 capital stock. The treasurer is W. C. Runyon, president of the Struthers Furnace Company. The last named company has an annual capacity of above 100,000 tons of pig iron and a daily capacity of 500 barrels of Portland cement.

The Alabama Consolidated Coal & Iron Company, which is controlled by the International Power Company, reports earnings of $49,517.89 for the month of February, 1906, making the total earnings for the first four months of the fiscal year $163,721.96. The new furnace now building at Gadsden, Ala., which will go into blast about the last of April, will materially increase the company's output of iron and is expected to show a corresponding reduction in the cost of production. The company is building 150 new coke ovens at Lewisburg and Searles.

At a meeting of stockholders of the Westinghouse Electric & Mfg. Company at East Pittsburgh on March 26 it was decided to approve the plan to increase the capital from $25,000,000 to $50,000,000 and to issue $15,000,000 convertible 5 per cent bonds, both to be issued at such times and for such purposes as may be ordered by the directors.

Dividends.—International Nickel Company has declared the regular quarterly dividend of 1 1-3 per cent. on the preferred stock, payable May 1.

American Locomotive Company has declared a quarterly dividend of 1¾ per cent. on the preferred stock, payable April 21.

American Shipbuilding Company has declared the regular quarterly dividend of 1¾ per cent. on the preferred stock, payable April 16.

Westinghouse Electric & Mfg. Company has declared the regular quarterly dividend of 2½ per cent. on the preferred assenting and nonassenting stock, payable April 10.

The Westinghouse Machine Company, Pittsburgh, has declared a quarterly dividend of 2½ per cent., payable April 10. A meeting of stockholders will be held in East Pittsburgh May 21 to take action with reference to the form of the bonds authorized in December.

E. W. Bliss Company, Brooklyn, N. Y., has declared a quarterly dividend of 1½ per cent. on the common stock and 2 per cent. on the preferred stock, payable April 2.

First Contract for the Gayley Dry Air Blast.

After a thorough investigation of the results obtained by the Gayley dry air blast, Edgar S. Cook, president of the Warwick Iron & Steel Company, has taken a license for his company and will proceed at once to equip its two furnaces at Pottstown, Pa. It is expected that the installation will be completed early in September. The plant will differ from the original one at Isabella furnaces in having six refrigerating chambers. Five chambers furnish the full capacity required, and the thawing of the pipes can be carried on in one chamber at a time without any interruption of the requisite refrigeration. As the humidity in the Schuylkill Valley is quite high in the summer months, the new plant will be well placed for a full demonstration of its economies. While not infrequently 12 grains of moisture are found in the air at Pottstown, 9 grains have been rarely exceeded at the Isabella furnaces.

The dry blast plant at Pottstown will be the pioneer installation at an independent blast furnace, and the contract just made marks the extension of a process which it has been predicted will obtain as wide adoption as the hot blast. The economies effected through the dry air blast, while attractive in any locality, are increased in the districts in which fuel is more expensive.

Labor Notes.

The Massachusetts Bureau of Labor has issued Bulletin No. 6 giving a preliminary summary of the results of its census for 1905 of the manufactures of Boston, excluding those with a factory product under $500. In comparison with 1900, the total number of establishments shows a decrease from 2878 to 2740, but an increase in the average number of employees from 52,853 to 59,160, and in the product made from $162,764,523 to $184,351,163. The returns for industries grouped under "foundry and machine shop products" show a decrease in number of establishments from 195 to 142, in average number of employees from 4571 to 4218, and products made from $8,966,047 to $8,907,966.

The polishers in the employ of the J. Stevens Arms & Tool Company, Chicopee Falls, Mass., struck March 18 on the refusal of the company to unionize its plant. The strike occurred after a conference between an official of the International Polishers' Union and officers of the Stevens Company, in which the former agreed that the rate paid for polishing was altogether out of reason and should be reduced. The company had found that it was paying its polishers on automobile work a piece-work rate that would have netted the men between $10 and $15 a day had they worked as they should have done. The polishers had been obliged to kill time in order not to earn too much. The excessive piece-work rate had been fixed by a former foreman in the automobile factory, and the company was so anxious to get its work out, with the very heavy pressure to fill orders on hand, that it had never properly looked up the prices until the establishment of its cost department, at which time the rates on work of all kinds were investigated. The readjustment of the excessive rates brought about the demand for unionizing the plant. The company continues to operate the remainder of its departments and is gradually filling the places of the striking polishers. The assertion is made, however, that the company will close the plant before it will abandon the principle of the open shop.

Charles Moran, one of the three men alleged to be members of the Housesmiths' Union, New York, arrested recently for attempting to dynamite the Bliss Building, has made a confession. He obtained employment last fall on the Bliss Building in East Twenty-third street, which Post & McCord have under contract. He says he was forced into the union under threats against his life; that later he was introduced to the walking delegate, who arranged with him and his two fellow prisoners to wreck a derrick on the Levering & Garrigues Building. He was not able to carry out the plan, however, and later the dynamiting of the Bliss Building was brought up. Moran implicates agents of the union in this plot. The secretary of the Housesmiths' Union denies that Moran is a member.

It is expected that the pig iron product of the United States Steel Corporation for March will be a record breaker. Were it not for a recent accident to the top of Ohio No. 3, the highest figures would surely have been attained. For the first 23 days of the current month each of the four Duquesne furnaces averaged 624 tons per day, and it is possible that this may more than counteract the falling off at the Ohio plant.

The United States Steel Corporation proposes to carry out a test, on an extensive scale, of coking Pocahontas coal in the Sharon by-product coke oven plant. It is understood that the principal object is to settle the question of equipping the great new Indiana plant with by-product ovens.

Lake Superior Mining Notes.

Miners' Wages Advanced.

DULUTH, MINN., March 24, 1906.—The iron mine operators in the Lake Superior region evidently ,recognize that the price of living has advanced and that wages should keep step therewith. At a recent meeting at Ishpeming it was decided to readjust wages to an extent that will give most of the men in the mines an advance. This step was voluntary on the part of the operators, not even a hint coming from the men for an advance. The advance dates from the beginning of the present month. A little over a year ago the United States Steel Corporation voluntarily announced an advance of 10 per cent., and this second advance to both surface and underground miners will cement still more firmly the very cordial relations in this region between operators and employees.

The weather on the Minnesota ranges has recently been more disagreeable, if not colder, than at any time during the winter. It may slightly retard the actual movement of ore. While the lakes are pretty well open some of the connecting waters are quite solidly frozen. The fleet at the head of the lakes is busily engaged in outfitting and will be ready on time. An unusually large coal fleet is waiting at lower lake ports for an early up trip, as coal stocks at Duluth and Superior are low. Naturally the down trip will include many cargoes of ore, thereby insuring a very early start.

The new dock work at the head of the lakes is moving along finely. The Allouez improvements will be completed about May 1 and the new Duluth, Missabe & Northern dock is making good progress. The season will open with double tracks on the Duluth & Iron Range Railroad from Two Harbors to Eveleth, accommodating such heavy shippers as the Spruce and Adams mines. This will greatly facilitate the movement from that part of the Mesaba.

On the Minnesota Ranges.

Diamond drill work is at high tide on the Minnesota ranges. Out on the new Cuyuna range, where subsidiary connections of the United States Steel Corporation are taking hold quite extensively, several contracts have been held in abeyance, owing to lack of drills. It will not be long, however, until things are readjusted and all delays overcome. The demand for black diamonds is something notable. One dealer within ten days filled orders aggregating fully $50,000.

The demand for unexplored iron lands on the western Mesaba continues strong. Recently a tract of 3000 acres southwest of Grand Rapids was taken over by Duluth investors. It is the intention to drill at least portions of this and there are strong expectations that iron will be found in good quantities. During the summer it is likely that some extensive exploratory work will be carried on in that considerable territory north of the Mississippi River, south of Cass Lake and northeast of Pine River, on the Minnesota & International Railroad. Many thousands of acres were acquired in that region last year by prominent iron men of Duluth, and they are not men who buy such lands for amusement or to hold for a great length of time without doing something with them.

Business conditions on the Mesaba range never have been brighter or more satisfactory than now. Labor is well employed, and even scarce. No labor troubles are in sight. .All the towns are growing and prospering. Virginia has almost a boom.

At the special election at Bovey recently, the proposition to permit the withdrawal from the village limits of the United States Steel Corporation's new mining location of Coleraine was carried. This location is named after T. F. Cole, president of the Oliver Iron Mining Company, and it is now planned to build a model town, this separation from Bovey being one of the preliminaries.

While the Steel Corporation holdings are extensive and very important on this part of the Mesaba range, considerable of the ore must be freed of sand by washing before it is marketable. Much of it is of Bessemer grade, but the general average in metallic iron is low, which compels it to be dressed up to about 60 per cent. for furnace use. This problem of washing, or concentration, is receiving much study, and it is anticipated that it will be satisfactorily worked out for these particular ores.

Geo. A. St. Clair & Son, Pickands, Mather & Co., and the Pitt Iron Company occupy the 7-mile stretch between Biwabik and Aurora, with the result that development work is moving along finely. At the Ajax stripping, which continued all winter, has been suspended for repairs to machinery, but will be resumed about April 1.

The Zeno Iron Company, a mining corporation of the Zenith Furnace Company, has taken over most of the holdings of Geo. H. Crosby and associates, and is working several drills, one of which is very close to Aitkin.

On the Vermilion range matters have been rather quiet, so far as development and exploratory work are concerned. Of course, usual and vigorous preparations are under way for the opening of the shipping season. At the Shagawa, on Section 30, work is moving along as usual, and such ore as has been encountered is exceptionally fine. There are unconfirmed rumors that some of the exploratory work has passed out of the ore body into the greenstone. Some maintain that this simply means the end of a lens of ore with nothing but barren ground beyond. The mining captain holds, however, that there is a " fold," and that the ore will be picked up below by means of a winze that is being sunk.

Exploration in Section 18, 63-13, on lands owned by the Robinson Lake Iron Company, has been stopped and drills removed. It is stated that the work done did not show results satisfactory to the explorers, but that, despite this, new interests are very anxious to step in and commence drill work. Shaft sinking will soon be started on the property of the White Lake Iron Company, in the Ely District. Diamond drilling has been under way there for many months, with considerable encouragement. Negotiations are under way for the exploration of several hundred acres of promising ground on Pine Island, on the edge of Lake Vermilion, a few miles from Tower.

Marquette Range.

Joseph Croze, of Houghton, representing a pool of upper Michigan investors, has applied to the Board of Supervisors of Houghton County for an option covering a tract in the western part of the Marquette range, in Baraga County. It is the intention to explore these lands for iron.

It is not generally known that Houghton County owns lands, but such is the case. In 1870 the State of Michigan needed funds with which to build military roads in the upper peninsula. Houghton County was the only one in the State having ready money, and loaned to the State. In return various tracts of land in the upper peninsula, belonging to the Commonwealth, were deeded to the county. Some of the lands have been sold, but some are retained still, and prospects for iron on these are considered excellent.

William G. Mather, president of the Cleveland-Cliffs Iron Company, while abroad recently, closed a deal with Lord Brassey, representing the Michigan Land & Iron Company, for 400,000 acres of land in upper Michigan, belonging to the last named company. The consideration is said to be about $1,500,000. The tract will add greatly to the Cleveland-Cliffs Company's timber lands for charcoal, as well as its territory for iron explorations. These lands were ceded to the State of Michigan by Congress in 1856, and subsequently passed into the hands of various railroad companies as grants, representing the 20 miles of line built between Marquette and Bay de Noc and Marquette and Ontonagon, and finally to Lord Brassey's company.

Gogebic Range.

Good progress is being made in the improvements planned by Pickands, Mather & Co. for the Brotherton and Sunday mines. At the former a boiler house and foundation for a 20-drill air compressor plant are under way. A four compartment shaft 8 x 24 feet will be sunk, with steel sets and a steel shafthouse of latest model. At the Sunday mine the new shaft gained 45 feet last month. A triple compound pump, with a capacity of 1000 gallons a minute, will be installed.

The Machinery Trade.

NEW YORK, March 28, 1906.

It appears as if unsettled conditions in the coal regions had exerted a restraining influence in the machinery trade, as a slight falling off in orders was noticeable the past week. Whether or not the procrastination on the part of buyers was due to the threatened labor troubles, the fact that some of the large projects which were expected to have matured by this time have been held up temporarily caused keen disappointment among those who had counted on booking large orders. The buying by the important steel companies continues and inquiries from this source indicate that the trade in this section, which has received a good slice of the business thus far placed, will be favored with orders for some time to come.

It will be of interest to makers of gas engines and automobiles to note that the Association Patents' Company, New York, an offspring of the Association of Licensed Automobile Manufacturers, has purchased basic patents on spark plugs or igniters for hydro-carbon explosive engines.

An indication of the fact that the loose leaf price book is coming into use in the trade quite generally is the recently published loose leaf price list issued by the Skinner Chuck Company, New Britain, Conn. This list is made to fit the No. 6 Morden loose leaf book, which has been adopted by the National Supply and Machinery Dealers' Association. The Skinner Company's loose leaves are put together in the form of books with a silk cord through the perforations, so that if necessary the pamphlet can be taken apart and the leaves slipped into the loose leaf book. The list consists of tables and information as to the Skinner Company's line of chucks, with single illustrations of the different styles of chucks on the back of the page on which price-lists and tables of dimensions are given. The leaves are neatly printed and it would be possible to use any one of the series singly.

The development of the manufacturing interests of Mexico has shown the advantages offered there for new transportation lines, and consequently the Mexican Central Railroad and other companies are preparing to make extensions. It is said among railroad men that the coming summer will bring forward a large number of projects for railroad extensions in Mexico, and engineers here who are informed as to such movements declare that preparations are now being made by the leading railroad interests for extensive additions to their lines. This will undoubtedly result in the purchase of much equipment here, as Mexican interests invariably look to this country for their machinery requirements. There has been considerable buying of late for Mexico, especially in the power equipment line, and the contemplated extensions, which will include the large oil districts in that country, will call for other heavy expenditures during the summer. While no definite announcement can be made as to just where the big railroad interests of Mexico intend to improve their systems it can safely be said that very shortly the public will be informed of a number of contemplated extensions, and this will be just as soon as surveys are completed and rights of way are arranged for.

It is probable that contracts will be placed within the next few months for work of constructing additional subways in this city, the routes for which were mentioned in our first issue of the year. The Rapid Transit Commission has approved the plan to build a subway to Coney Island as an extension to the Fort Hamilton route, the extension to run from Atlantic and Flatbush avenues down Fourth avenue to Fortieth street, to New Utrecht avenue to Eighty-sixth street, and then at a point between Thirty-third and Thirty-fourth avenues come to the surface and run as an elevated road to Coney Island.

Detroit Tunnel Power Specifications.

Specifications are now in the hands of the trade covering the electric and power equipment for the electrical operation of that part of the Michigan Central Railroad adjacent to and through the proposed new tunnel under the Detroit River from Detroit, Mich., to Windsor, Ont. The specifications do not state the horse-power of the plant to be installed, but leave to the bidder the size of the power plant, substations, number of units and other details, and the apparatus that will be purchased will be that which seems to the engineers of the tunnel to be the best for the economical operation of the road. The contractor whose bid is accepted is to install the plant, which must be operated for one month to the satisfaction of the railroad company. The specifications cover the erection of power station and substations, the installation of the machinery and all material that is necessary for a complete and up to date electric line. The equipment of the power station will include water tube boilers, turbo generators or other prime movers, surface condensers, electric traveling cranes, boiler feed pumps, horizontal feed water heaters, turbo exciters, induction motor exciters, mechanical stokers and coal and ash handling machinery. There are required five submerged vertical centrifugal pumps direct connected to motors, and eight electric locomotives for hauling freight and passenger trains. Bids for this equipment will be opened on June 1. The engineers are now going over the bids for the construction of the tunnel, which were opened a few days ago, and it is expected that within the next week or so the contract will be let for the construction of the tunnel. As the tunnel is to be more than a mile in length the successful contractor will undoubtedly have to purchase a great deal of machinery for construction work. An interesting feature of the awarding of the contract will be the decision as to the material of which the tunnel is to be built. The engineers have favored to some extent a concrete tunnel and it is probable that that material will be used. In connection with improvements to be made by the Michigan Central, one of the New York Central lines, it is interesting, in view of extensive construction work and purchases of machinery to be undertaken this year by the New York Central Railroad, to note the proposed increase of capital stock of that road by $100,000,000, as it is probable that considerable of the money derived from the sale of the new stock will be used for improvements. Another of the New York Central lines that the trade is keeping close watch on is the Cleveland, Cincinnati, Chicago & St. Louis Railroad, which is working on the plans for its proposed new shops at Indianapolis, Ind. These shops are to be quite extensive, and will call for the installation of a large amount of new machinery.

Plans are well along for the proposed new shops of the Norfolk & Western Railroad at Roanoke, Va., to which we have referred in these columns before. The preliminary plans call for the erection of a new foundry, 140 x 740 feet, and several other large buildings.

The Delaware, Lackawanna & Western Railroad contemplates the erection of shops at Scranton, Pa., to be used exclusively for the manufacture and repair of mining machinery at its anthracite mines. It is understood that the plans for the buildings have been completed and that there will be erected a machine shop, 25 x 150 feet; carpenter shop, 50 x 200 feet; blacksmith shop, 32 x 48 feet, and a large storage building. R. A. Phillips is superintendent of the coal mining department.

The unusual demand for heavy power equipment will, it is thought, bring the requirements for the great electric power station to be built by the Pennsylvania Railroad on the south side of Thirty-first street, between Seventh and Eighth avenues, New York, before the trade shortly. It is known that the designers of the power station are Westinghouse, Church, Kerr & Co., and while this may indicate where the orders for the major portion of the power equipment will be placed, it is understood in the trade that there is considerable auxiliary equipment to be bought. The plans for the power house, filed with the Building Department, show that it will be 99 x 161 feet and four stories in hight. The power house will be built in connection with the large terminal to be erected by the company, for which excavation is now being made.

The plans for the new machine shop, power station, &c., to be erected in connection with the proposed terminal of the Erie Railroad at Jersey City have not been completed as yet, although it was expected that they would be finished by March 15. The engineers are still working on the specifications, and it is probable that they will not get before the trade for some weeks. It may be stated, however, that the company has decided to construct the terminal, and it is thought the purchasing of the equipment will be done during the summer. David H. Wilson, Jr., has been engaged by the Erie Railroad to look after its electric equipment as electrical engineer of the road, and his duties will consist of superintending the electrical motive power and the general electrical equipment of the company's various shops. He will superintend the equipping of the Erie's big power house at Hornellsville, the contract for the equipping of which has been awarded to Westinghouse, Church, Kerr & Co. In addition to superintending the installation of this power Mr. Wilson will devote himself generally to shop equipment and like work along electrical lines. Mr. Wilson has lately been connected with the American Locomotive Company, and previously to that was on the engineering staff of J. G. White & Co.

Important Industrial Requirements.

The United States Steel Corporation is now taking up the question of purchasing machine tools and other minor tools for the extensive improvements to be made throughout its mills, which have been outlined from time to time in *The Iron Age*. A number of machine tool men have received inquiries from this source and it is expected that there is more to follow. As has been stated in these columns, the company has in course of preparation plans for additions to several of its machine shops, and as these improvements are to be made during the year, the ordering will of necessity have to be done very shortly. It is thought that the inquiries now out, which are for a scattered assortment, are only the forerunners of extensive purchasing that will be done before long. It is understood that a great deal of buying will be done in this city, although some purchases will be made in the West, particularly those required for Western plants. The inquiries lately sent out by the United States Steel Corporation do not only include the machine

tools, but also coal and ash handling equipment, which is to be added to some of the company's existing plants.

The Bethlehem Steel Company has had inquiries in the trade of late for machine tools and such apparatus as is used in blacksmith and repair shops. The list, it is understood, is not extensive, nor does it cover a very general assortment of tools. This company has about closed its purchases for rolling mill equipments which we mentioned two weeks ago, and it is understood that the power equipment has also been bought for the same plant. The deals were actually closed in Bethlehem, it is understood, but the details were arranged in this city, and the best part of the orders were captured by New York houses.

Work has been commenced on the new Buffalo plant of the Otis Elevator Company and the rail and plunger shop, 308 x 406 feet, of brick and steel construction, to cost $130,000, is well under way. The complete plant as at present planned comprises ten buildings. In addition to the rail and plunger shop there will be a machine shop, 120 x 890 feet; shipping building, 119 x 200 feet; electric equipment shop, 130 x 755 feet; pattern vaults, 120 x 210 feet; office building, 100 x 130 feet; power station, 100 x 300 feet; car and grill shop, 130 x 635 feet; escalator shop, 130 x 640 feet, and foundry, 120 x 800 feet, with two large cupola annexes; besides various storehouses for the storage of raw material. Plans for a brass foundry are also under consideration. It is not the intention to erect all of these buildings at once, but to build them as rapidly as it is found desirable to focus the manufacture of the various lines of elevator work in Buffalo. The buildings comprising the plant will be of fire proof construction and all machinery, traveling cranes, &c., will be electrically operated by direct connected motors. The site consists of 33 acres, with a maximum frontage of 2700 feet on Grider street and a large frontage on the New York Central belt line, from which spur tracks will run into the yards and shops, affording ample transportation facilities.

In addition to the extensive machinery requirements for the Utah Copper Company, one of the subsidiary interests of the American Smelters' Securities Company, which were noted in these columns last week, the Guggenheim interests have other projects in view in conjunction with a plan to construct one or two more large smelters in the West. The trade has been following this company very closely, as most of its buying is at least directed from this city, and in fact a large majority of its purchases are actually made in the company's offices at 71 Broadway. It is said in the trade that specifications are being prepared there for considerable power machinery as well as coal and ash handling machinery and other equipment for smelters.

The Fuller Combing Gin Company, Charlotte, N. C., has brought out a new cotton gin, and is to equip its plant with the latest and most economical machinery that can be procured. The company is now in the market for complete equipment for its machine shop, foundry and wood working shops, which will be operated by independent motors. The plant is to be equipped with electric power, and the company will need considerable power equipment. James T. Fuller is president.

A large amount of new machinery is required by the Vulcan Iron Works, Seattle, Wash., manufacturer of mining and other machinery, mill, mining and marine supplies and engines and boilers. The company has disposed of its real estate holdings to one of the new railroads being built to that city, and is now making arrangements to build a large and thoroughly up to date manufacturing plant to consist of completely equipped machine shop, foundry, pattern shops, forge shops, rolling mills, supply house, &c. The company will build its new plant on the outskirts of the city and is anxious to communicate with manufacturers and receive catalogues, circulars, blue prints and illustrations covering building and necessary equipment for such a plant. H. P. Strickland, who is secretary and treasurer, has the matter in hand.

It is stated that the American Car & Foundry Company, St. Louis, Mo., has prepared plans for the construction of additional buildings for the manufacture of steel cars. The new group of buildings is to cover quite an area, the main building being 180 x 800 feet.

New bids are being secured by Hugh Kelly & Co., 81 Wall street, New York, for the large sugar refinery which the United Fruit Company has in contemplation for Nipe Bay, Cuba. Bids on the machinery equipment for the refinery, which will be one of the largest if not the largest of its kind in Cuba, were secured by Mr. Kelly during the past month, but it was found that some changes would have to be made to the extensive power equipment as a result of some other general alterations in the plant. Consequently the revised specifications were sent out and those who had bids on the power equipment before were asked to make new bids. It is understood that the contracts for the equipment for this plant, which besides power machinery includes various equipment for sugar refining, including crushers and the like, will be awarded before very long. The plant at Nipe Bay will be capable of handling about 5000 tons of cane a day and the contract for erecting the building, which will contain 2300 tons of steel, has been awarded to the Baltimore Bridge Company.

The Toronto Railway Company, Toronto, Ont., will shortly issue new stock to the extent of about $1,000,000, to be used for making improvements to its plants and additions to its system. We are officially informed that the plans for the improvements have not as yet been prepared.

Business Changes.

Pawling & Harnischfeger, Milwaukee, Wis., builders of electric traveling cranes and hoists, have opened a New York office at 45 Broadway, which is under the management of William F. Brewster.

Catalogues Wanted.—T. C. Flinn, representing the Kennedy Valve Mfg. Company, desires catalogues of Brass and Iron foundry equipment and machinery used in the manufacture of high pressure valves and the like. Communications should be addressed to him, in care of the Board of Trade, Elmira, N. Y.

George Engle, who has embarked in business as engineer and machinist at 44 Nepperhan street, Yonkers, N. Y., wishes to receive catalogues on general machinery supplies and especially on belting, nuts and bolts.

Philadelphia Machinery Market.

PHILADELPHIA, March 27, 1906.

Orders have come out more freely the past week than for some time and the general machinery market is in considerably better shape. While most of the business placed has been for small lots of tools, mostly of the medium sizes, a fair lot or tools for part of the equipment of the new plant of the Walter Automobile Company, Trenton, N. J., was recently divided among several of the local dealers. Except in a few cases the demand for heavy machine tools has been weak. The approaching crisis in the deliberation of the coal operators and their employees continues to have a depressing influence on the trade, and no doubt is holding up both inquiries and the closing of prospective business. This uncertainty, however, will soon be at an end, and while it is still as undecided as ever as to what the result will be, the decision will be welcomed as removing the uncertainty as to what may be expected during the next few months. Should the matter be settled without a strike there will no doubt be quite a rush to place business which has been temporarily withheld. If, however, a strike should be declared, it is expected that business will be rather inactive for some months. Many of the manufacturers in this vicinity have taken the precaution to stock up both fuel and other raw materials, and will therefore be in pretty good shape to operate their plants should a strike be finally declared.

The market continues bare of big propositions. Extensive equipment for the railroads or for new plants are notable in their absence. There is a fairly good demand, however, for general power equipment in the medium capacities. Deliveries do not materially improve. Manufacturers of machine tools are receiving a fair day to day business and have not been able to catch up to any extent on already delayed shipments. On some lines of tools it is impossible to get definite dates of delivery, and dealers report the loss of sales in a number of cases for this reason alone.

There has been a continued good demand for second-hand machinery and for machine tools of the heavier type, and the local market is reported somewhat bare of the latter at the present time. The supply, however, varies greatly, and it is said by some dealers that stocks will be greatly increased in a short time. Boilers and engines of the medium horsepowers have sold fairly well. The demand for the smaller sizes, however, is weak, as the gas and gasoline engine trade has cut into this branch of the business quite extensively.

Export trade is unchanged. There is still a good demand for the various specialties, but that for the general line of standard machine tools continues rather weak.

Iron and steel foundries are having a large tonnage of business offered, greater in some cases than can be individually taken care of. Steel foundries find it almost impossible to make deliveries as fast as customers desire. The local gray iron foundries continue to improve their condition, and the greater proportion are now producing from 90 to 95 per cent. of their tonnage prior to the inauguration of the strike of the molders and coremakers during the closing months of last year.

In our report of last week we announced the election of J. A. Cochrane of Billamy & Cochrane, as president of the recently formed Philadelphia Supply & Machinery Dealers' Association, which was incorrect. Fred C. Spaulding of Spaulding & Metcalf was elected president.

The Coplay Cement Mfg. Company, Philadelphia, will erect within the next 60 days a new one-story machine shop, 28 x 80 feet, at its plant at Coplay, Pa. Plans and specifications have been posted by the architect and engineer, A. W. Barnes, 911 Walnut street, this city. Most of the equipment of the new shop will be supplied by spare parts already at the mill.

The Wilmington Heat, Light & Power Company, Wilmington, Del., will shortly erect a new power house on the

Brandywine River, in that city. The new building will be 100 x 100 feet and built of reinforced concrete. Bids for the equipment have been already received.

H. M. Shimer & Co., metal refiners, have begun operations on the additions to their plant, previously mentioned in these columns. The building will be of brick and steel, 60 x 80 feet. Smelting furnaces sufficient to double the present capacity of the plant will be erected in the new addition.

Frank Toomey, dealer in second-hand engines, boilers and machinery, reports the sale recently of a number of boilers ranging from 100 to 250 horse-power; also three large Westinghouse engines, a 28 x 48 and a 22 x 42 Corliss engine, and a number of machine tools of the heavier types. Inquiries have been numerous and have led up to sales quite promptly. There has been a particularly good demand for large machine tools, purchasers having turned to the second-hand market for their needs in this line owing to the inability to get prompt deliveries on new tools. Sufficient orders are in hand to keep all departments actively engaged for many weeks.

The Philadelphia Roll & Machine Works has recently taken the heaviest individual orders for rolls in the history of the company; over 40, varying in weight from 7 to 12 tons each, both sand cast and chilled, having been received from one customer. Additional orders for 18 of similar weight have been received from other parties; also extensive orders for general castings, such as engine beds and machinery castings, all of which are made from air furnace charcoal iron. The new machine shop, equipped with a number of new roll lathes, is now in complete operation, and sufficient work is on hand to keep all departments active for a long period.

The Wm. Cramp & Sons Ship & Engine Building Company launched, March 22, the steamship Mexico, building for the New York & Cuba Mail Steamship Company. The Mexico is a sister ship to the Merida, launched by the Cramps some time since, and is of the same general dimensions and of 9670 tons displacement. The contract speed is 15 knots and the vessel when completed will ply between New York, Cuban and Mexican ports.

Chicago Machinery Market.

CHICAGO, ILL., March 27, 1906.

Western manufacturers and dealers in machine tools and equipment report continued heavy demand, and while lists covering complete outfits are not as numerous as last fall small orders are more plentiful and the volume is undoubtedly as large. Manufacturers of pneumatic tools are months behind on deliveries and both the Independent Pneumatic Tool Company and the Chicago Pneumatic Tool Company of this city are enlarging plants at Aurora, Ill., and Franklin, Pa., respectively. At Aurora the Independent Pneumatic Tool Company has taken two floors in a building adjoining its factory and has purchased $50,000 worth of machinery, while the Chicago Pneumatic Tool Company is practically doubling its plant at Franklin. The largest railroad list promulgated this year has just been issued by the 'Frisco System, and on account of the heavy purchases made by many of the Western roads last fall dealers are not counting very heavily upon this trade this year. On account of the large amount of building that is under way throughout the West and Northwest power plant installations are numerous, and the equipment in some of the large Chicago office buildings now invariably includes an individual lighting plant. Considerable foundry equipment has recently been purchased for the new foundry of the Griffin Wheel Company at Pullman, and the American Steel Foundries has plans prepared for the erection of a new foundry at Granite City, Ill. All of the bids for the power plant equipment for the Cook County Building were rejected by the County Commissioners and specifications will be readvertised shortly.

Chicago & Eastern Machine Tool List.

The Chicago & Eastern Illinois Railroad, one of the lines of the 'Frisco System, will erect new railroad shops at Danville, Ill. E. L. Downs, 1715-1719 Jackson boulevard, prepared the plans for the buildings, which will be of brick, built on concrete foundations, and include the following: Blacksmith shop, one story, 100 x 112 feet; boiler shop, one story, 108 x 209 feet; machine shop, one story, 141 x 312 feet; roundhouse, 17 stalls, 90 feet in diameter; storehouse, two stories, 50 x 100 feet. The buildings will have composition roofs. Bids are now being received by the purchasing agent of the 'Frisco System at St. Louis for the following tools and equipment for these shops: One Newton No. 3 combination cold saw for rail and frog work, with motor chain drive; two 36-inch Gisholt boring mills, with turret heads, belt driven; one six-spindle turret drill, one Hartz flue welder, one Acme three-spindle bolt cutter, one Wangler rotary beveler; one Morton Mfg. Company special railroad shaper, one 84-inch driving wheel lathe, one 24-inch Gisholt turret lathe, one Sellers universal tool grinder, one 36-inch Gisholt boring mill, with turret head; one pipe threading machine, one Newton nut forging machine, one single punch and shear, 25-inch throat; one hydraulic wheel press, 200 tons pressure, for 44-inch wheels; one Pond latest improved steel tire car wheel lathe, four Hilles & Jones double punches and shears, 20-inch throat; one No. 12 Fay & Egan large diameter planing and joining machine; one 5½-inch Niles radial drill, three 18-inch screw cutting lathes, one vertical double spindle universal boring machine, one National bolt heading and forging machine for 2-inch bolts, one 3½-foot radial drill, one 28-inch Cincinnati shaper, one No. 2 Buffalo blower, two National 2-inch bolt cutters, with full set of dies; one 28-inch Cincinnati shaper, one 2-inch single National bolt cutter, one No. 4 Buffalo blower, three 12-inch Slate sensitive drills, three No. 2A Franklin cranes, one 20-inch Fay & Egan No. 2 hand planer and joiner, one No. 2 improved Stanton saw table, one Farrington valve acting apparatus, one Joseph T. Ryerson & Son flue cleaning machine, motor driven; one 26-44 double spindle lathe, with internal gear, distance between centers 7 feet. The estimated cost of the buildings and equipment is $250,000.

To keep pace with its rapidly growing business the Power & Mining Machinery Company, Cudahy, Wis., will expend about $300,000 in improvements. An addition will be made to the foundry which will practically double its capacity and excavations will be made at once for this building. Contracts will be let in a few days for quite a number of new machine tools, many of which will be of special design. Contracts have already been let for cranes, furnaces and cupola, planing, rolling mill and slotting machinery. These improvements will necessitate the employment of about 300 more men, bringing the total force up to 1000. In addition to manufacturing mining and milling machinery the company is now building smelting machinery, rock and ore breakers, gas and oil engines, gas producers, cement machinery, timber preserving plants, heavy sheet metal working machinery and machinery for manufacturing sand-lime bricks.

The New Phœnix Foundry & Machine Company, Springfield, Mo., will purchase new equipment for its shops, as follows: Shaper, planer, boring mill, disk grinder, keyseating machine, drill grinder, air compressor, belt driven trip hammer, gas fired muffler, pneumatic hoists and tools for the foundry, power splitting shear, power rolls, power punch and small pneumatic tools for the boiler shop. The company is now erecting a new plant, consisting of four one-story buildings, each 50 x 70 feet. The buildings will be a foundry, machine shop, blacksmith shop and boiler shop.

The Canton Mfg. Company, Canton, Ohio, is in the market for sheet metal working machinery.

Pfeiffer & Smith, manufacturers of special tools and machinery, Milwaukee, Wis., have completed plans for a new factory to be built at Clinton street and Greenfield avenue. It will be 50 x 150 feet, two stories high, and will be constructed with a view to supporting two additional stories if required. The cost of the building will be about $18,000.

The Frost & Wood Company, Limited, manufacturer of agricultural implements, Smith Falls, Ontario, will build a new plant of about 150,000 square feet of floor space. Toolroom, machine shop and wood working machinery will be required. Power will be generated by electricity.

The Inter-Mountain Power Company, Salt Lake City, Utah, will ask for bids during the month of April for the installation of three complete hydroelectric plants. One station will consist of four 750-kw. units, operating under a head of 1060 feet; approximately 15,000 feet of 36-inch wooden stave pipe and about 3000 feet of riveted steel pipe. Another station will consist of two 600-kw. units, operating under a head of about 975 feet, requiring about 8000 feet of 30-inch wooden stave pipe and 3000 feet of riveted steel pipe. The third station will consist of a 500-kw. unit, supplied by pipe line 5000 feet in length, 14 and 16 inch pipe, with an effective head of 1650 feet. The storage reservoir which will be constructed to supply the larger of these stations will be about 700 feet in length and 85 feet in hight. It will be used for the purpose of regulation and to increase the average flow of the stream during the low water season. The impulse type of water wheels will be used throughout. A fourth unit of 750-kw. capacity will be installed next year below the large reservoir; also a steam plant of two 500-kw. units, work on the latter to begin during the fall of the present year. Electric power will be supplied to the mining camps of Park City, Alta and Bingham Canyon, and to the various smelting and mining enterprises in Salt Lake Valley. These installations will be 17 miles from Salt Lake City.

Cincinnati Machinery Market.

CINCINNATI, OHIO, March 27, 1906.

While the week's business in machine tools has been fairly good and inquiries have come forward in a manner entirely satisfactory, there appears to be a feeling of hesitancy manifest, and orders received have been mainly for a very limited number of tools. This condition of affairs, however, is not viewed by the trade with any degree of apprehension, as machine tool builders without exception have sufficient work booked ahead to carry them into the summer months, and any large new contracts made now

would mean delayed deliveries beyond this period. The unsettled condition of the miners' troubles is not without its effect on industries of this kind, and the uncertainty of the termination of the negotiations between the miners and operators is no doubt largely responsible for any desire to delay purchases that may exist. It is hoped, however, that by the end of the week matters will have assumed such shape that a strike will be avoided and everything satisfactorily settled.

Work along all structural lines has been very seriously delayed, on account of the severe weather, it being very exceptional for the month of March to record a snowfall of 7 inches in this territory.

During the week a tract of 20 acres of land was purchased by William Andrews, secretary of the Newport Rolling Mill Company, which it is the intention to improve in the near future. This land is situated between the Queen City racetrack and the Louisville & Nashville bridge near the city of Newport. While all plans are not complete, Mr. Andrews states that it is the intention to erect a large steel plant to supply Billets to the rolling mill, considerable difficulty having been experienced in securing such material from the steel manufacturers.

The Dreses Machine Tool Company, which recently suffered heavy loss by fire, has temporary offices with Schumacher & Boye on Spring Grove avenue. The work of clearing up the debris is being rapidly pushed, and such of the machinery as can be utilized is being taken to 231 West McMicken avenue, where three buildings have been secured and where the company will conduct its business until it is decided what to do in regard to rebuilding on the burned site. A large proportion of the machinery is damaged to such an extent that it will be impossible to use it, and a number of new tools will of necessity be required to put the present shops in satisfactory condition for operating.

Mention was made several weeks since relative to the D. T. Williams Company securing larger and more commodious quarters. At that time the exact location was kept a secret owing to some complications in the settlement, but we are now able to advise that a new building will be erected on the south side of Hunt street, about four squares east of where the plant is to-day. This lot is 125 feet on Hunt street and is 247 feet deep. Here will be erected a steel concrete building, estimated to cost about $125,000. Facilities for shipment by railroad will be excellent, as a spur track connecting with the C. L. & N. road forms the eastern boundary line. Plans are now being made by a local architect, and the improvement will probably cover the entire lot and be four stories high. There will be a brass foundry in connection with the plant for the manufacture of automobile trimmings, and one entire floor will be used as a garage. The annual meeting of the stockholders will take place next month when a proposition to increase the capital stock from $100,000 to $250,000 will be submitted.

Since our last report the stockholders of the Casey-Hedges Company, Chattanooga, have met and organized, as follows: M. M. Hedges, president; H. S. Probasco, vice-president; H. M. Levy, second vice-president; W. S. Todd, secretary and treasurer; directors, C. E. Page, Alfred Hill, John McDonald, John Littleford and Herman Erdman of Cincinnati and J. B. Sizer of Chattanooga. The company will manufacture boilers, engines and plumbers' supplies. Trade is said to be remarkably good and orders are booked far ahead.

Sealed proposals will be received at the office of the Commissioners of Water Works of the city of Cincinnati, until 12 o'clock noon April 27 for the construction and erection of two motor driven centrifugal pumps, each having a capacity of 1000 gallons per minute, and two motor driven centrifugal pumps, each having a capacity of 2500 gallons per minute, and two steam driven direct connected electric generating units, each of 75 kw. capacity, in accordance with plans and specifications on file in the office of the chief engineer of the said board.

New England Machinery Market.

WORCESTER, MASS., March 27, 1906.

There is no doubt that the record of industrial building in New England will be broken this year. Plans already announced demonstrate that 1905 will be far outstripped, although it was one of the best years in point of new construction that the six States have ever experienced. The outlook for this year applies not only to metal lines of manufacture, but to general manufacturing business, including textiles. Many new industries are starting, most of them in a small way, but in the aggregate reaching a large total of money invested. But the chief gain is in the expansion of existing industries. It is known that many announcements of building plans are yet to be made, including large works. The aggregate will be a demand for vast quantities of machinery of all descriptions and mill equipment generally, including power plants.

The manufacturing machinists of Lynn, Mass., have organized as the Lynn Machinists' Association. The purpose is the usual one, to cultivate a better acquaintance among this class of manufacturers, not only in the city of Lynn, but including the neighboring towns, which contain important works which come under the same head; and, also, for the discussion of matters of mutual interest to members, and for the general plan of co-operation which has produced many beneficial results to both employers of labor and their employees in other places where similar organizations have been established. H. I. Illingworth, superintendent of the Boston Machine Works, Lynn, is the president of the new association, and Charles P. Stanborn of C. P. Stanborn & Co. is secretary and treasurer.

Vast quantities of coal have been stored in New England since a coal strike became a possibility. Many manufacturers have bought heavily and coal is seen stored in all sorts of places, even in fields outside of works in country neighborhoods. The railroads have made unusual preparations. The dealers have also been forehanded, so that smaller manufacturers who have no facilities or means of procuring a stock of fuel to last through a strike will undoubtedly be cared for if the emergency should arise. Altogether it seems as if provision had been made to tide industries through a considerable period of time in case of a coal strike.

The large electric companies will begin immediately the erection of notable additions to their works in New England. The General Electric Company has already taken out building permits for large buildings at the Lynn works. A machine shop will be extended 200 feet, with a width of 140 feet and one story, and a three-story manufacturing building, 80 x 500 feet, will be erected. The Stanley-G. I. Electric Mfg. Company, Pittsfield, Mass., one of the interests of the General Electric Company, is planning large extensions, but has not yet made definite announcement of what these improvements will consist of. Another of the General Electric properties, that of the Bryant Electric Company, Bridgeport, Conn., will be considerably increased, as already announced. The aggregate demands for machine tools and other equipment for these works will be large, though as the purchases of equipment on the part of the several managements are going on practically all the time the effect of the new business will not be so very much above the normal. Among the companies manufacturing electrical specialties in New England, of which there are many, the growth of business has been very marked during the last six months and most of them are increasing their manufacturing facilities, some of them by the erection of new buildings, others by availing themselves of space already available.

The Holmes Motor Company, West Mystic, Conn., has been incorporated in Connecticut, with a capital stock of $30,000 to manufacture the new Auto marine engine. The company has begun manufacturing, but is still in the market for some new machine tools and other equipment. The incorporators are Charles D. Holmes, Charles E. Wheeler and B. L. Holmes of Mystic, William K. Holmes, Jr., New York, and Henry A. Holmes, New London.

The Knox Motor Truck Company, Springfield, Mass., manufacturer of automobile trucks, has so increased its business during its first year of existence that it will increase its capital stock from $150,000 to $250,000. Walter G. Morse, recently elected president and general business manager of the company, has taken much of the new stock. The plant and machine equipment will be immediately increased, Mr. Morse states. The company intends to put on the market, in addition to its present 2 and 3 ton trucks, a heavy delivery wagon of 1 ton capacity and a heavy truck of 4 or 5 tons capacity.

The W. M. Steele Switchboard Company, Sargent and Gold streets, Worcester, Mass., is in the market for a two-spindle sensitive drill.

The Corbin Screw Corporation, New Britain, Conn., has completed plans for its new factory building in that city. The structure will be 45 x 600 feet and seven stories. The building will be of steel, brick and concrete construction, fireproof throughout. A power plant will also be erected, forming a separate building. It has not been definitely decided what form of power will be employed. The company is one of the constituent parts of the American Hardware Corporation.

The Goddard Machine Company, Holyoke, Mass., is to go out of business. The company manufactures a line of grinders and other machine tools and is very well known in the trade. The business was established in 1889, with the late Joel S. Webber as president. The process of winding up the business has been going on gradually for some time, but it was decided to take quicker steps, and a few days ago an assignment was made for the purpose to Fred S. Webber, Edward N. White and N. P. Avery. The company has asked Boston machinery dealers to submit bids for the shop equipment.

The United Printing Machinery Company is enlarging the power house of its plant at Jamaica Plain, Mass., to double its power. One of the company's engines and generators will be installed.

The W. & E. T. Fitch Company, New Haven, Conn., manufacturer of carriage and saddlery hardware, is to erect a

five-story addition to its factory, and the present four-story building will be raised one story.

The Bullard Machine Tool Company, Bridgeport, Conn., has received its catalogue No. 32 from the press and will be pleased to send a copy to interested parties.

Government Purchases.

WASHINGTON, D. C., March 27, 1906.

The Isthmian Canal Commission will soon ask bids for six horizontal tubular boilers, three duplex piston pattern feed pumps, three upright water tube feed water heaters, four locomotive coaling cranes of 10 tons capacity, four locomotive coaling cranes of 20 tons capacity, hydraulic jacks, &c.

The Bureau of Supplies and Accounts, Navy Department, Washington, will receive bids until April 10 for generating set, hydraulic jacks, buffing lathe, boiler test pump and other supplies for the Eastern navy yards.

The Isthmian Canal Commission will receive bids until April 13 for tubular boilers, marine boilers, electric light plant equipment, duplex pumps, feed water heaters, condenser and other supplies.

The Bureau of Supplies and Accounts, Navy Department, Washington, will receive bids until April 24 for concrete mixer, steam pump and a quantity of other supplies for the Mare Island and Puget Sound navy yards.

The Isthmian Canal Commission is now preparing specifications for complete tin shop equipment.

The Bureau of Supplies and Accounts, Navy Department, Washington, will receive bids until April 17 for the following machine tools for the Boston, Newport, League Island, Annapolis, Norfolk and Pensacola navy yards: Schedule 429, water tube boilers, motor, planers, shaper, lathes, surfacer, saw and saw bench, wood trimmer, grinders, milling machines and grindstones; schedule 430, engine lathes, crane carriage, high duty shaper.

The following bids were opened March 19 for supplies for the Isthmian Canal Commission, circular No. 301:

Bidder 12, Drew Machinery Agency, Manchester, N. H.; 20, Handlan-Buck Mfg. Company, St. Louis, Mo.; 31, Manning, Maxwell & Moore, New York.

Class 8. Item 11, one box bed heading, upsetting and forging machine; item 12, one box bed heading, upsetting and forging machine—Bidder 12, item 11, $2466 or $2574 or $2046 or $2148; prices for item 12 same as for item 11; bidder 20, each item $2037.50, total $4075; bidder 31, $2127.25 for each item, total $4258.50.

The Harbison-Walker Refractories Company's Position.—A number of papers have published a paragraph concerning a combination to be formed of indpendent fire brick manufacturers. It has been stated that this combination would include the plants of the Harbison-Walker Refractories Company, the concern to be known as the American Refractories Company. As the paragraph referred to contains a misstatement in regard to the Harbison-Walker Company, it wishes to go on record as stating that it will not combine or work with the proposed combination in any way whatever. The majority of the preferred and common stock of the Harbison-Walker Refractories Company is owned by those connected with its management, and they cannot see how it would be to their interest to enter into any combination or understanding with any other independent company or with any such combination of manufacturers as has been given out in the statement referred to. Within the past few years the Harbison-Walker Refractories Company has been approached by many of the fire brick manufacturers of Pennsylvania with an offer to buy its works, but the company has refused in every instance to consider such a proposal, its policy being to build well located, up to date plants whenever it requires an increased capacity.

New Bridge at Niagara Falls.—The Trans-Niagara Bridge Company has been incorporated at Albany for the construction of a bridge to cost $800,000 for electric trolley service across the Niagara River at Niagara Falls. It will be located 300 feet below the present upper steel arch bridge and will connect the International Railway system on the American side with the McKenzie-Mann-Nichols syndicate system of electric roads in Canada, permitting the running of through electric cars between Buffalo and Toronto, Hamilton and other Canadian cities. The plan also includes the running of cars between Rochester and Lockport through Niagara Falls to Hamilton and Toronto, the Buffalo, Lockport & Rochester Railway Company having just awarded a contract to the Transit Construction Company of New York to build a double track trolley line from Rochester to Lockport via Erie Canal villages to Niagara Falls. When the new bridge is finished the present upper bridge will be reserved for carriages and pedestrians.

Large Stocks of Anthracite Coal.—The anthracite coal operators issued a statement at New York on March 24 to the effect that unless speculators get hold of anthracite coal in sufficient quantities to cause an artificial scarcity there will be plenty to last for many months in case of a strike. There is now on hand within a radius of less than 100 miles of New York City a reserve supply of more than 9,000,000 tons of marketable grades. This is held by the coal operators, in addition to the heavy supplies held by dealers and large consumers. At the South Plainfield yard of the Lehigh Valley Railroad Company are 14 piles of coal each 75 to 80 feet high, with a base of 275 to 300 feet, which contain nearly 500,000 tons. New York City consumes about 15,000,000 tons of coal a year, but the mild winter just past reduced the consumption about 25 per cent. below the average of winter months. It is stated that in the event of a strike there will be no inconvenience such as attended the anthracite strike of 1902.

The Riverside Metal Company, Riverside, N. J., manufacturer of German silver and phosphor bronze, ingots, sheets, rods and wire, is making large extensions to its plant in order to take care of the increased demand for its products. The company has just completed a new brick and iron rolling mill, 105 x 205 feet, at a cost of $25,000, and now has in course of construction a stamping and metal manufacturing plant of brick and iron, 115 x 150 feet, which will cost $20,000 and which will be used for slitting and stamping German silver. The rolling mill is being equipped with a power plant and special machinery to cost approximately $75,000, and will be used chiefly in the manufacture of phosphor bronze. Plans are now under consideration for the erection of an additional foundry and office building, both of which will be built this year. Most of the machinery that will be used in the new building is of special design and has been purchased.

The Navy Department announces that tests of Midvale armor plate designed for the battle ship Mississippi, which were made March 3 at the proving grounds at Indian Head, were very satisfactory. Three shots were fired from an 8-inch gun at a 9-inch plate, standard navy capped armor piercing projectiles being used, and the velocity of the shots in every case exceeding contract requirements, but in no case was there the slightest bending, cracking or other distortion of the plate.

C. W. Leavitt & Co., 14 Cortlandt street, New York, dealers in special metals and alloys, call attention to the characteristics of magnesium metal as a deoxidizer for aluminum bronze sand and mold castings. This effect is to remove objectionable aluminum oxides formed in the melting bath. They separate themselves from the casting while the metal is being poured into the mold. It has been found that magnesium is also a good deoxidizer of new silver, argentan, britannia metal, pure aluminum and nickel bronze and red brass alloys.

R. S. Henderson, Sharon, Pa., formerly connected with the selling department of the Republic Iron & Steel Company, is in Europe.

The American Natural Gas Company and the Kiskiminetas Natural Gas Company, supplying natural gas to Apollo, Vandergrift, Leechburg and other adjacent towns in western Pennsylvania, have decided to consolidate under the name of the American Natural Gas Company, with a capital of $1,000,000, which was the combined capital of the two companies.

Trade Publications.

Warehouse and Elevator Machinery.—The Philip Smith Company, Sidney, Ohio. Catalogue No. 16. Illustrates a line of warehouse and elevator machinery and mill supplies. These include corn shellers and cleaners, grain separators, grain and seed cleaners, feed mills, passenger elevators, dumping apparatus, all kinds of conveyors and various supplies, such as shaft hangers, flange and clutch couplings, chains, link belting, sprocket wheels, buckets, leather belting, pulleys, clutches, &c.

Hub, Spoke and Bending Machinery.—The Philip Smith Company, Sidney, Ohio. Catalogue. Most of the subject matter appeals particularly to the manufacturer of wheels, engravings and descriptions being given of a power feed bolting saw machine, automatic rip saw machine, hub block roughing machine, hub block boring machine, double equalizing machine, felloe bender, cut off saw, rip saw, &c. The latter part of the catalogue contains sundry equipment, such as shaft hangers, boxes, couplings, shafting, set collars, pulleys, belting, &c.

Contracting.—Frank B. Gilbreth, 34 West Twenty-sixth street, New York. Pamphlet. Subject, "System in Contracting." Its object is to explain what system in contracting is, what it accomplishes and what the principles are underlying the cost-plus-a-fixed-sum contract. An extract from the *Wall Street Journal* deals with system in contracting, and illustrations show a number of pieces of work with which this contractor has been connected. Notable among these is the building of practically a complete manufacturing town at Sprague's Falls, Maine, for the St. Croix Paper Company.

Electrosteel.—Hammacher, Delius & Co., 429 Greenwich street, New York. Circular. Describes the manufacture and properties of Gysinge electrosteel. The advantages and a list of the various grades are given.

Electric Transformers.—Westinghouse Electric & Mfg. Company, Pittsburgh, Pa. Circular No. 1126. Deals with type C, core type, static transformers for alternating current.

Protective Paint.—The Goheen Mfg. Company, Canton, Ohio. Three folded sheets; size, 18 x 23 inches. Contain display matter pertaining to Galvanum, a paint that will adhere to new galvanized iron; carbonizing coating for preserving iron and steel, and oxidized carbon cement for filling pittings and inequalities on vessel hulls, dry dock pontoons, &c. The material, it is claimed, is indestructible by the action of sea water, sewerage water and mine waters. Illustrations are given in each case of work on which these materials have been used.

Steam Whistles.—Crosby Steam Gage & Valve Company, 16 Dey street, New York. Circular. Deals with the Crosby single bell chime whistle for use on locomotives, steamships, factories and fire alarms.

Planers and Shapers.—The Hamilton Machine Tool Company, Hamilton, Ohio. Catalogue No. 5. Size, 6 x 9 inches. Pages, 80. Covers a newly designed line of planers and shapers. The planers include spur geared and spiral geared types in standard and widened patterns. Standard planers range in size from 24 x 24 inch to 72 x 72 inch, and the widened patterns in capacities from 27 x 24 inch to 120 x 72 inch. The planers are illustrated by numerous engravings and the construction is described in detail. Half-tones show numerous applications of motors to the driving of planers. The shapers are similarly treated by a general and complete description covering all of their parts and attachments. The shapers are at present made in 16, 20 and 24 inch sizes, and motor driven shapers are furnished when required. An appendix refers briefly to the other goods manufactured by this company, including lathes, upright drill presses and radial drills.

Weighing and Recording Machine.—Weston Engineering Company, 56 Pine street, New York. Mailing card. Contains an illustration and brief reference to the Blake-Denison automatic and continuous weighing and recording machine.

Punching and Shearing Machines.—Henry Pels & Co., 68 Broad street, New York. Catalogue No. 30. Size, 8 x 11 inches; pages, 47. This catalogue supersedes all previous issues and very completely treats of the line of punching and shearing machines of the well-known steel plate frame construction made under the Johns patents. The catalogue shows careful consideration in its compilation and deserves special mention for the very comprehensive manner in which it provides the information that the purchaser is most likely to need. An index quickly locates any special machine or subject, and with each machine are given tables of dimensions in which it is made; one item not generally given is the power required to drive the machine. The machines shown include beam shears, coping machines, double angle shears, bar and angle cutters, combined machines with cutters, shears and punches, cutters with interchangeable knives, shearing machine with interchangeable punching tool, single and double shearing machine, and a variety of punching machines of special patterns for special lines of work. Motor drive applications are shown in several cases. In the last part are shown some hand operated machines.

Pressure Gauges.—American Steam Gauge & Valve Mfg. Company, Boston, Mass. Circular. Describes a combined pressure and recording gauge which indicates the pressure at all times and gives a record of the pressure for 24 hours on a chart.

CONTENTS.

HARDWARE

A VERY interesting and important decision in regard to the enforcement of restricted selling prices on goods has recently been rendered by the U. S. Circuit Court of the Southern District of Ohio, and will be sure to command wide attention. In this case the manufacturers sold a certain silk fabric of their manufacture, with the understanding that it should not be retailed at less than 50 cents a yard. This understanding was not expressed in a definite and formal contract on the part of the purchaser, but was based on the fact that the retailers in question received a circular calling attention to the fabric and containing this statement: "Our price on Banzai silk is 32½ cents and it is sold with the understanding that it will not be retailed for less than 50 cents." At the suggestion of this circular and without any conversation or correspondence on the subject, a retail house placed an order for the silk, each package of which was found to have on it a label to this effect: "Banzai silk is purchased under an agreement that it will not be retailed for less than 50 cents a yard." In the regular course of business the retail house cut the price, apparently making a leader of the goods. Suit was brought by the manufacturers, with the result that first a temporary and then a permanent injunction was issued, restraining the merchants from advertising, selling or offering for sale the silk in question at less than the stipulated price.

Apart from its bearing on the control of trade prices generally, this decision is significant as indicating a tendency of the courts to permit manufacturers to control the prices at which their patented or other specialties are sold to the public. It appears to be in advance of former decisions and to afford an opportunity to the makers of goods to secure the maintenance of retail selling prices to an extent which has heretofore been deemed impracticable. It remains, of course, to be seen whether the decision will be sustained on appeal or the same principle applied in other cases by the highest courts, but meanwhile it certainly gives the advocates of restricted prices a strong argument for the legality of this method of curbing competition and curtailing the cutting of prices, which has been a source of so much embarrassment to both the manufacturers and the retail merchants. It would seem especially to have important bearing on the quotation of cut prices by catalogue houses. If it should be found that the prices quoted by these houses could thus be regulated by the manufacturers or jobbers who supply them, it may become an important means of diminishing the evils which result from the present broadcast distribution of their catalogues.

There are, however, too many unsettled questions connected with the subject, relating both to its effect upon actual business and to the view to be taken of the principle by the courts, to permit at this time too much assurance that in it will be found a remedy for any large proportion of existing trade disturbances. It is not quite clear precisely how far the principle in question goes, or how it would be interpreted and enforced in the complicated transactions of business. If restricted prices by any chance should come to prevail in connection with any considerable part of the articles which constitute a Hardware stock it would certainly, to say nothing of the increased detail of the manufacturer's selling department, add enormously to the difficulties of the jobber, to whose business the adoption of the system would be attended with much complexity and detail and constant annoyance.

The action taken by the National Retail Hardware Association at its recent meeting in Chicago, as reported with some fullness on other pages, will in general commend itself to the approval of the trade. This body, consisting of about 70 delegates from various State associations, considered in a conservative and earnest manner the different questions which came before it. It had, too, the satisfaction of recording remarkable progress during the year and of continuing the work intrusted to it under especially favorable auspices. The retiring president, W. P. Bogardus, is entitled to congratulations on the excellent work accomplished during his three administrations, as well as on the honor and affection in which he is held and the multitude of friends he has made, not only among retail merchants, but also among the manufacturers and jobbers with whom he has been brought in contact in connection with his official labors. He is succeeded by E. M. Bush, a merchant of ability and standing, who possesses peculiar qualifications for his high office in view of his position as a merchant, his ability and culture, his experience in association work and the attractive personal qualities with which he is endowed. Under his leadership it may be anticipated that the association movement will make still further progress, supplemented as his efforts will be by able coadjutors.

The action taken by the association in regard to the trade press was, however, somewhat unfortunate. The resolutions embodying this action may be understood by some casual readers as condemning the publication of anonymous communications in general, but the association was careful to avoid such an unwise and indefensible position. The aim apparently is to shield the association and its officers and those working in harmony with it from anonymous criticism. It is overlooked that in journalism generally it is the uniform practice to print communications, the names of whose authors are not given, but are held in confidence by the editors. In this way the trade are given the advantage of the real opinions, frankly expressed, of prominent men who would not care to write over their own signatures because of the possibility of becoming involved in controversy or of jeopardizing their interests by antagonisms which might be aroused. It looks as if the association, from its fear of criticism, puts itself on record in the maintenance of an unsound principle. We trust that its officials will continue to be so wise and efficient and its policy so reasonable that there will be in the future, as in the past, little ground for adverse criticism and much ground for commendation and approval. There will, however, doubtless be frequent occasions for suggestion and the expression, possibly, of differences of opinion on some questions of trade or association policy, and in such cases the views of merchants and manufacturers can often most effectively and satisfactorily be made known in communications from men of responsibility and character whose names are withheld by the editors.

An illustration of this is given in the following columns. We present a letter from a manufacturer in regard to the growing practice of having exhibits at Hardware conventions. Our correspondent expresses views which may not be entirely agreeable to the friends and advocates of the exhibit feature at these annual gatherings, and some may dissent from his arguments. It would probably be injurious to the business interests of the writer if his identity were made known. His letter must be read without this knowledge, but with the editorial assurance that it is from a manufacturer whose name would add weight to it. It is for the trade to consider the arguments presented in such cases rather than the name or position of the correspondent. If they cannot meet the arguments it would be a poor substitute to be enabled to attack or ridicule the writer.

In another respect the resolutions in question are open to criticism. They are evidently prompted by the publication of anonymous communications in some trade journal, communications which are deemed detrimental to the interests of association work. On this ground they recommend the editors of all trade papers to refrain from permitting their correspondents anonymously to criticize the association or those furthering its interests. This action on their part we respectfully and in the friendliest spirit submit is illogical, impertinent, cowardly and unnecessary. It is illogical because it asks all trade papers to pursue a certain unusual course on account of the real or fancied indiscretion or wrongdoing of one. It is impertinent because it attempts to dictate editorial policy and management. It is cowardly because, instead of naming the journal whose course is condemned, it makes a sweeping anonymous charge which may be applied by those who read the resolutions to *The Iron Age* or any other trade journal in the country. It is unnecessary because of the excellent work of the association, which speaks for itself, and the high character of its officials, who are regarded with the fullest confidence and if criticised or attacked are abundantly able to take care of themselves. On the whole, the resolution is a footless one and unworthy of the great association which adopted it.

Condition of Trade.

In so diverse a field as that covered by the Hardware trade there is necessarily much diversity in the features which prevail in various lines. Owing to special influences some branches of business may be exceedingly active while others chronicle something of a falling off in current demand. This is the case at the present time when many manufacturers are overrun with orders and speak in the most enthusiastic terms of business and the outlook for the remainder of the year. Others report while they are kept occupied in the execution of orders on their books and so quite unable to accumulate anything of a stock that orders are not coming in quite as rapidly as they might desire. In connection with this diversity of experience Hardware manufacturers and those making closely related lines refer to there being a slight weakness here and there, but without much quotable change. Any such concessions in price are, however, offset by strength in other directions, although at present there is probably more of a tendency toward lower than toward higher prices. Heavy goods are as a rule those in which such concessions are most frequent, but such concessions are generally slight and may not indicate a general tendency so much as special influences affecting the goods in question. The jobbing trade generally is very busy and retail merchants find their time fully occupied in the current spring trade. The financial situation is very satisfactory and little complaint is made of collections.

Chicago.

The cold weather which prevailed throughout the West and Northwest during the past ten days has had no perceptible effect on the Hardware trade, although the Implement dealers and manufacturers report that this short spell of inclement weather gave them temporary relief from the insistent demand that set in as soon as there were indications of an early spring. Shipments of Implements are being rushed forward by the large manufacturers in this district at an unprecedented rate and early indications point to a record breaking season, while there is a general belief among the trade that the heavy stocks accumulated will prove none too large. In the Southern States the buying of Bale Ties has set in much earlier than usual and dealers in Northern and Southern States are making heavy sales for Tieing Bales that are being made up from stocks. Manufacturers and jobbers are preparing for a heavy movement of Nails during April, and while the large distributers are not placing much new business with the mills their heavy specifications are making big inroads into existing contracts and another buying movement in April for May and June requirements of fair volume is expected by the manufacturers. Notwithstanding the firm quotations maintained by the sheet mills the lighter gauges of both Black and Galvanized from store are slightly lower in price, this no doubt being due to the large puchases by the large jobbers when prices were on a lower basis. An advance of 10 per cent. has been made in Strap and T-Hinges, manufacturers being heavily booked ahead. Quotations on Builders' Hardware are firmly maintained and the manufacturers are practically being overwhelmed with orders. Frequent reports are heard of concessions on Wire Cloth from the jobber to the retailer despite the low prices made by the manufacturers and a difficulty is experienced in securing early shipments. The volume of business done by the leading jobbers during the present month promises new high records and the compilation of the totals is awaited with much interest.

NOTES ON PRICES.

Wire Nails.—The very large shipments on contract orders have prevented an accumulation of stocks at the mills, and they are also somewhat behind on shipments. Prices are firm and quotations are as follows, f.o.b. Pittsburgh, plus actual freight to point of delivery, 60 days, or 2 per cent. discount for cash in 10 days:

Carloads to jobbers	$1.85
Carload lots to retail merchants	1.90

New York.—Inclement weather has caused a falling off in demand for small lots from store. It is understood that jobbers' prices are being well maintained. Small lots from store are quoted on the basis of $2.15 per keg.

Chicago.—The short period of inclement weather has had no appreciable effect on the distribution of Nails and shipments from mills and jobbers' stocks continue exceedingly heavy. Stocks in the hands of producers are not nearly as great as in former years and the big April movement may to some extent be affected by this shortage. The heavy specifications that have been received by the mills during the past two months have reduced tonnage contracts and heavy buying is expected for May and June shipment. Quotations generally are being well maintained and no advance is in sight. We quote as follows $2 in car lots to jobbers and $2.05 in car lots to retailers, with an advance of 5 cents for less than car lots from mills.

Pittsburgh.—Shipments of Wire Nails by the mills on contracts are so enormously heavy that the mills have not been able to accumulate any stocks, and are still very much behind in deliveries. The outlook for the building

trade this year in nearly all sections of the country is regarded as very bright and the consumption of Nails is expected to be correspondingly heavy. Some of the Wire Nail concerns, who have to buy raw materials, are insistent upon an advance in Wire Nails, which, however, is opposed by the large interests, who believe the market is high enough and should remain on a conservative basis. Prices are firm and we quote: Wire Nails, $1.85 in carloads to the large jobbing trade and $1.90 in carloads to retail merchants, f.o.b. Pittsburgh, plus actual freight to point of delivery, terms 60 days, less 2 per cent. off for cash in 10 days.

Cut Nails.—A meeting of the Cut Nail Association is scheduled for this week. Specifications on contract orders are being received in liberal quantities by the mills. New business continues light. Quotations are as follows: $1.80, base, for carload lots, f.o.b. Pittsburgh; $1.85 for less than carloads, f.o.b. Pittsburgh; $1.95 for carload lots, on dock, New York; $2 for less than carloads, on dock, New York. Iron Cut Nails at points west of Buffalo and Pittsburgh are held at 5 to 10 cents advance on Steel Cut Nails.

New York.—Demand for small lots from store is limited, but jobbers' prices are being maintained. Quotations are on the basis of $2.05 per keg.

Chicago.—Western distributers report a fairly good demand, although the biggest distribution is looked for during the month of April. The mills continue in receipt of heavy specifications and on a few sizes deliveries are deferred. Quotations are firmly maintained as follows: Steel Cut Nails in car lots, $1.95; less than car lots, $2; Iron Cut Nails, $2.05 in car lots; less than car lots, $2.10.

Pittsburgh.—Jobbers are specifying liberally on contracts and shipments by the mills are quite heavy. It is believed that demand for Cut Nails in April will show material improvement. Prices are firm, and we quote: $1.80, base, for carload lots, f.o.b. Pittsburgh; $1.85 for less than carloads, f.o.b. Pittsburgh. Iron Cut Nails at points west of Buffalo and Pittsburgh are held at 5 to 10 cents advance on Steel Cut Nails.

Barb Wire.—The movement of Barb Wire from mills on contract orders continues heavy, and stocks show no accumulation. Quotations are as follows, f.o.b. Pittsburgh, 60 days, or 2 per cent. discount for cash in 10 days:

	Painted.	Galv.
Jobbers, carload lots	$2.00	$2.30
Retailers, carload lots	2.05	2.35
Retailers, less than carload lots	2.15	2.45

Chicago.—Mill shipments continue unabated and the present season will without a doubt be the largest in the history of the trade. The demand for Poultry Netting also continues very heavy, and although stocks have been drawn upon since the first of the year distributers are in many cases anticipating shipments. Practically all of the material accumulated at the mills has already gone forward and shipments are now to a large extent entirely dependent upon the daily output. Quotations are unchanged and firmly maintained, as follows: To jobbers, Chicago, car lots, Painted, $2.15; Galvanized, $2.45. To retailers, car lots, Painted, $2.20; Galvanized, $2.50. Retailers, less than car lots, Painted, $2.30; Galvanized, $2.60. Staples, Bright, in car lots to jobbers, $2.10; Galvanized, $2.40; car lots, to retailers, 10 cents extra, with an additional 5 cents for less than car lots.

Pittsburgh.—While new tonnage coming in is not heavy the mills are making large shipments on contracts and anticipate a heavy movement in Wire next month, or just as soon as the roads have again become passable to allow distribution of Wire to the consumer. Prices are firm, but unchanged, as follows: Painted Barb Wire, $2, and Galvanized, $2.30, in carload lots to the large jobbing trade, with the usual advance of $1 a ton to retailers in carload lots, f.o.b. Pittsburgh, 60 days, or 2 per cent. off for cash in 10 days.

Smooth Fence Wire.—Current demand is fair, while specifications on contract orders are being received by the mills in large volume. The mills are somewhat behind on shipments in consequence. Quotations are as follows, f.o.b. Pittsburgh, 60 days, or 2 per cent. discount for cash in 10 days:

Jobbers, carloads	$1.70
Retailers, carloads	1.75

The foregoing prices are for base numbers, 6 to 9. The other numbers of Plain and Galvanized Wire take the usual advances, as follows:

	6 to 9	10	11	12&12½	13	14	15	16
Annealed	Base	$0.05	.10	.15	.25	.35	.45	.55
Galvanized	$0.30	.35	.40	.45	.55	.65	1.05	1.15

Chicago.—The demand for Telephone Wire and Bale Ties is increasing every week and a big season is looked for. In the South heavy purchases of Bale Ties are being made and the season has opened up in the West and Northwest much earlier than in former years. The Telephone trade promises to exceed all records, as many extensions are under way. Fence manufacturers continue to specify freely, but little new business is being placed, as material is still going forward on contracts closed before the first of the year. Quotations are firm and unchanged, as follows: To jobbers, $1.85, f.o.b. Chicago, in car lots, and car lots to retailers, $1.90.

Pittsburgh.—Current demand is fairly large and Fence manufacturers continue to specify heavily on contracts for Fencing Wire, on which the mills are somewhat behind in deliveries. The market is firm, and while some of the manufacturers favor an advance in prices this is opposed by the larger mills and no change is likely to be made for some little time. Quotations are as follows, f.o.b. Pittsburgh, 60 days, or 2 per cent. discount for cash in 10 days:

Jobbers, carloads	$1.70
Retailers, carloads	1.75

The above prices are for base numbers, 6 to 9.

Tacks.—We give below the discount sheet of the Grand Crossing Tack Company, Grand Crossing, Chicago, Ill., which represents the company's prices to the general trade. In view of the fact that there is some diversity in the quotations made by different manufacturers this list of prices will be of interest as giving a general view of the market. It will be borne in mind that lower prices are obtainable by larger buyers:

Basket Nails				80%
Basket Tacks				90 and 37½%
Berry Box Tacks				90 and 37½%
Bill Poster Tacks				90 and 50%
Brush Tacks				80%
Burrs				60 and 10%
Carpet Tacks, ½ and ¼ wt., Silver or Blued				90 and 37½%
Carpet Tacks, ½ and ¼ wt., Tinned or Coppered				90 and 37½ and 10%
	6	8	10	12 ounce.
75 Count, Silver or Blued	$5.25	$5.56	$6.18	$6.79 per 100 doz.
Tinned or Coppered	5.87	6.18	6.79	7.41 per 100 doz.
100 Count, Silver or Blued	6.49	6.79	7.41	8.03 per 100 doz.
Tinned or Coppered	7.41	8.00	8.64	9.26 per 100 doz.
250 Count, Silver or Blued, guaranteed count				$2.15 per gross.
Tinned or Coppered, guaranteed count				2.50 per gross.
500 Count, Silver or Blued, America's Best				$3.70; plain paper boxes, 3.70 per gross.
Tinned or Coppered				4.32; plain paper boxes, 4.32 per gross.
¼ lb. Papers, Silver or Blued, Fort Dearborn				2.90 per gross.
Tinned or Coppered, Fort Dearborn				3.21 per gross.
House Tacks, Blued				2.16 per box.
Keg Tacks, Ajax				$2.16 per gross; Tinned, 2.47 per gross.
Needle Point				2.04 per gross; Tinned, 2.34 per gross.
Big Barrel				4.32 per gross; Tinned, 4.95 per gross.
Chair Nails				80%
Cheese Box Tacks				90 and 37½%
Cigar Box Nails				70%
Clout and Trunk				80 and 5%
Clout and Trunk, Tinned				80 and 10 and 5%
Copper Clout Nails and Tacks				40%
Cooper's Tacks				90 and 37½%
Curtain Tacks				90 and 50%
Cut Tacks, Blued, ¼ and ½ wt				90 and 37½%
Double Pointed Tacks, papers				90 and 10 and 10 and 10 and 10%
Double Pointed Tacks, bulk				85 and 10%
Dowel Pins, Wire Nail list				85 and 10%
Escutcheon Pins, Iron				60%
Finishing Nails				70%
Gilt Nails				30%
Gimp and Lace Tacks				90 and 50%
Glazier Points, ½ lb. packages, $11.75; ¼ lb. packages,				$12.00 per 100 pounds.

Hungarian Nails, 3½-8 and longer, 2 lb. dozens, $12 50; 2½ lb. dozens, $15.43; 3 lb. dozens....$16.66 per 100 dozens.
½ wt.....80 and 20%
Improved Brass Shoe Nails.....$23.00 per 100 pounds.
Japanned Solid Heads, in papers, 60%; in bulk.....80%
Leathered Carpet Tacks.....45 and 10%
Lining and Saddle Nails, Silver, 34%; Japanned.....44%
Looking Glass Tacks.....65%
Picture Frame Points.....75%
Rivets (except Copper).....72%
Shade Nails, Wire Nail List.....85 and 10%
Staples, Barbed Blind.....80 and 15%
Netting, Galvanized.....85 and 10 and 10%
Wire Cloth, bulk, 80%; papers.....90%
Steel Carpet Tacks, bulk.....90 and 50%
Steel Carpet Tacks, bulk, Tinned or Coppered.90 and 50 and 10%
Swedes Carpet Tacks, bulk.....90 and 50%
Swedes S. S.....90 and 37½%
Swedes Tacks, Jay-Eye-See.....85 and 15%
Trunk Tacks.....90 and 50%
Trunk Tacks, Tinned.....90 and 50 and 10%
Upholsterer Tacks.....90 and 50%
Wire Nails and Brads.....85 and 10%

In weight goods dozened the above discounts are for straight weights. Light weights cost 10 and 5 % less. Straight weights will always be sent unless light weights are specified.

Strap and T Hinges, etc.—Manufacturers of Wrought Butts and Strap and T Hinges announce, under date March 20, higher base prices, as given below. Beyond the discounts named the retail trade will readily obtain an additional 10 and 5 per cent. or 10 and 10 per cent. discount:

Wrought Butts.

	Per cent. Discount.
Reversible and Broad	75 and 5
Light Reversible, Light Narrow	75 and 10
Loose Joint, Narrow, Light Inside Blind, etc	75
Back Flaps, Table, Chest	70 and 10

Wrought Strap and T Hinges.

Light Strap	65
Heavy Strap	75
Heavy Strap Corrugated	75
Light T	60
Heavy T	55
Extra Heavy T	70
Extra Heavy T Corrugated	70
Hinge Hasps	45
Long Chest	50
Crate Hinges	65
Crate Hasps	45

Bolts and Nuts.—The volume of trade in Bolts and Nuts continues heavy, although it is reported that manufacturers, most of whom have been running far behind their orders, are catching up to some extent. The idea is suggested that most of the goods now being made were sold at prices somewhat lower than present published quotations, and doubt is expressed whether many contracts are being booked at this level. However this may be, producers apparently are not so anxious for business as to make material concessions, prices showing a tendency to hold firm, especially on larger sizes. Competition is a little more active on smaller sizes, as there are a greater number of manufacturers in the field.

Axes.—It is becoming apparent that the low prices on Axes prevailing since March 1 have stimulated pretty active buying on the part of the jobbing and the retail trade. For some time past large handlers of these goods have kept their stocks down in expectation of the conditions now ruling in the market. As a result requirements have been exceptionally heavy and buyers have not been slow to take advantage of the low prices now obtainable. Recent reports are to the effect that some important manufacturers have a large part of their output already contracted for and are withdrawing from active competition for orders.

Conductor Pipe and Eaves Trough.—Manufacturers of Conductor Pipe and Eaves Trough have made no changes in discounts, &c., except as regards Copper Pipe and Trough. On these lines advances amounting to about 7½ per cent. were declared, which will be put in effect April 1.

Binder Twine.—Selling of Binder Twine is reported as being fairly active. There is a difference of ¼-cent by Western manufacturers, which is shown in the following schedule, which gives a fair idea of the market:

	Cents per pound.
Sisal	9¾ to 10
Standard	9¾ to 10
Standard Manila	10¾ to 11
Manila (600 foot)	12 to 12¼
Pure Manila (650 foot)	13 to 13¼

Five-ton lots, ⅛-cent less. Carloads, ¼-cent less. F.o.b. Central points, with the usual ¼-cent added for Northwestern and Missouri River delivery. A ¼-cent reduction on the above schedule of prices would fairly represent the Eastern market, this being the difference in freight between Central points and New York.

Rope.—Demand is fairly good, at unchanged quotations. Quotations are as follows: Pure Manila, 12½ cents; B quality, 11½ cents; Pure Sisal, 9½ cents; No. 2 quality, 8 cents per pound.

Window Glass.—Local jobbers are now quoting discounts of 90 and 10 and 5 for all sizes of single and double strength Glass. A call has been issued for a meeting, to be held on Thursday of this week, by the Window Glass manufacturers. It is anticipated that manufacturers will advance prices at this meeting. If this is the case local jobbers will make another advance in their prices. It is reported that the Eastern Jobbers' Association have advanced prices to 90 and 15 per cent. discount all around; also that the Western Window Glass Jobbers' Association have advanced prices from 5 to 10 per cent. Local demand is comparatively light. Former prices of Plate Glass, it is reported, were reaffirmed last week.

Linseed Oil.—Unsettled weather conditions have had a tendency to keep buying down to actual requirements, which are moderate. The domestic seed market is a trifle higher and foreign seed markets are a little firmer. With settled weather an increased demand is anticipated. Prices show no change. City Raw is quoted at 42 to 43 cents, and out of town Raw at 40 to 41 cents per gallon. Boiled Oil is 1 to 2 cents advance over Raw.

Spirits Turpentine.—The local market for the week under review has declined about 1½ cents. Demand is moderate. New York quotations are as follows, according to quantity: Oil Barrels, 70½ to 71 cents; Machine Made Barrels, 71 to 71½ cents per gallon.

REQUESTS FOR CATALOGUES, &c.

The trade is given an opportunity in this column to request from manufacturers price-lists, catalogues, quotations, &c., relating to general lines of goods.

REQUESTS for catalogues, price-lists, quotations, &c., have been received from the following houses, with whom manufacturers may desire to communicate:

FROM A. MADSON & SONS, Atwood, Kan., who will open a general store at Beardsley, Kan., May 1, and will handle all kinds of Hardware and Roofing.

FROM GEO. C. NADEN, Gage, O. T., who has lately succeeded E. Learnard in the Shelf and Heavy Hardware, Paint, Harness, Stove, Tinware, Glass and Sporting Goods business.

FROM WILKOWSKE & WOLF, Morristown, Minn., whose Hardware store was recently destroyed by fire, the loss amounting to about $9000, largely covered by insurance.

FROM A. N. PATRIARCHE & Co., Battle Creek, Mich., who have recently removed from Marlette. The firm handles a general line of Hardware.

FROM SWANK HARDWARE COMPANY, Johnstown, Pa., whose large establishment was destroyed by fire on the 28th inst., as noted elsewhere in this issue.

MASBACH HARDWARE COMPANY, now at 117 Chambers Street, New York, wholesale General Hardware and Cutlery, will as soon as repaired and adapted to its use, occupy the entire building at 84 Warren Street, having five floors above the street and two basements, thereby giving the company about 50 per cent. more and needed room. Mr. Masbach has purchased both No. 84 and the adjoining building, which can be used in the future as the business warrants.

THE HOT SPRINGS CONVENTIONS IN JUNE.

(By Telegraph.)

A JOINT meeting of the Executive Committees of the American Hardware Manufacturers' Association and the Southern Hardware Jobbers' Association was held in the Fort Pitt Hotel, Pittsburgh, on Tuesday, March 27. Those present from the American Hardware Manufacturers' Association were: Robert Garland, chairman, Garland Nut & Rivet Company, Pittsburgh; C. F. Carrier, Cronk & Carrier Mfg. Company, Elmira, N. Y.; William H. Hays, Iron City Tool Works, Limited, Pittsburgh; Edward Ingalls, the Atha Tool Company, Newark, N. J.; Edward M. Kemp, Wabash Screen Door Company, Chicago; W. M. Taussig, Challenge Cutlery Corporation, New York City; F. D. Mitchell, secretary-treasurer, and Henry B. Lupton, Oliver Iron & Steel Company, Pittsburgh. Those present from the Southern Hardware Jobbers' Association were: F. B. Dunlop, president, Speer Hardware Company, Fort Smith, Ark.; O. B. Barker, Barker-Jennings Hardware Company, Lynchburg, Va.; W. W. Webber, Webber-Ayers Hardware Company, Fort Smith, Ark.; Charles H. Ireland, Odell Hardware Company, Greensboro, N. C., and C. B. Carter, secretary-treasurer, Knoxville, Tenn. The object of the meeting was to arrange for the joint conventions of these two organizations, to be held at Hot Springs, Va., on June 12 to 15, and to arrange schedules of time for the executive sessions, subjects to be taken up at the joint sessions and at the two separate executive sessions of the two associations. A distinct departure to be made at the conventions this year is that a

Joint Programme

will be used instead of having separate ones, as heretofore. A very interesting programme was outlined for the convention, including entertainment and a banquet on Wednesday evening, June 13. Two subjects that will be thoroughly discussed at the convention are those of "Integrity of Contracts" and "The Effect of Quantity Differentials." The identification badge used at the Washington, D. C., meeting last year and which was so popular, will also be used at the Hot Springs conventions.

Committees.

The entertainment to be provided for the delegates was put in the hands of a Joint Entertainment Committee of the two associations. A committee, consisting of Henry B. Lupton, chairman, Oliver Iron & Steel Company, Pittsburgh; C. W. Asbury of Enterprise Mfg. Company, Philadelphia, Pa.; George P. Hart of the Stanley Works, New Britain, Conn., and F. D. Mitchell, was appointed to recommend a time and place for the conventions next year and will report at the Hot Springs meeting.

The full programme of the Hot Springs convention is expected to be ready for mailing to the members within two weeks. Andrew Carnegie, who has leased the cottage of M. E. Ingalls of the Big Four Railroad at Hot Springs and will be there for some months, will be asked to attend the banquet on Wednesday evening and make an address. Should circumstances permit it is believed Mr. Carnegie will be present, as he attended a meeting of the National Hardware Association in Pittsburgh some years ago and made a very happy address, which was thoroughly enjoyed by those who were fortunate enough to hear it. The delegates at the meeting in Pittsburgh, named above, and in addition W. C. Reitz and F. H. Forman of the Pittsburgh Steel Company; F. S. Merrick of the Standard Horse Nail Company, New Brighton, Pa.; George V. Willson of the Hussey-Binns Company, Pittsburgh, and A. J. Bihler of the J. C. Lindsay Hardware Company, Pittsburgh, were entertained at dinner at the Union Club, Pittsburgh, on Wednesday evening by Robert Garland of the Garland Nut & Rivet Company, Pittsburgh. The dinner was a most enjoyable affair.

ROBERT MURPHY & SONS, manufacturers of Shoe, Oyster and Paperhangers' Knives, Corkscrews, Wood Engravers' and other Steel Tools, have removed from Harvard, Mass., to their new factory at Ayer, Mass. Here, with improved facilities and increased space, they will be able to insure prompt and satisfactory service.

TRADE ITEMS.

THE SATTLEY STACKER COMPANY, Indianapolis, Ind., is sending out to retail merchants a display stand designed to facilitate the sale of the company's Rogers Belt Punch, the latter being a tool intended especially for the farmer and machine man. The display stand is 15 x 11 inches and presents a neat and attractive appearance. One of these stands is furnished free with each dozen Belt Punches ordered by the merchant. The company reports a large sale of the Belt Punch and is making daily shipments to all parts of the United States, orders being also filled from South America, South Africa, England, Germany, Sweden and other foreign parts.

THE HENDEE-KATZ BRUSH COMPANY, Milwaukee, Wis., has been organized and will manufacture a variety of Wire Brushes and Brooms, as originated by C. C. Hendee. Mr. Hendee was the founder of the Hendee Wire Brush Company of Milwaukee, from which corporation he has retired, having disposed of his entire interest to the other stockholders. The new company will soon be issuing a catalogue which in addition to the former line of Wire Brushes and Brooms will present a number of new and attractive styles.

REFERRING to the power, considering size and weight, of the Covert Automobile Jacks, the Covert Mfg. Company, Troy, calls our attention to a test recently made by Prof. T. R. Lawson, engineer in charge of tests at the testing laboratory of the Rensselaer Polytechnic Institute of Troy. The No. 1 Jack, weighing 6 pounds, and the No. 2 Jack, weighing 8 pounds, withstood each a pressure of over 20,000 pounds, while the No. 3 Jack, weighing 12 pounds, withstood a pressure of over 30,000 pounds. The company refers to these results as far exceeding anticipations.

THE JOHN M. HART COMPANY, Chicago, mill representative in wooden ware, Hardware specialties, &c., has recently taken into its management H. D. Hart, who was for 14 years in the sales department of the American Steel & Wire Company. Mr. Hart, who is a brother of J. M. Hart, founder of the company, will be secretary and treasurer. The John M. Hart Company is mill representative to the jobbing trade only, representing, among other concerns, the following: Wabash Screen Door Company, Washboards; Hanover Wire Cloth Company, Del phos Can Company, W. H. Howell Company, Eberhard Faber Company, John Sommer's Son and the American Crayon Company. In addition to the general offices at Chicago, branches are maintained at St. Louis, Kansas City, St. Paul, Grand Rapids, Mich., and Memphis, Tenn.

OSCAR ANDRESEN died Thursday, March 22, of pleurisy, which had led to other complications. Mr. Andresen was born in Germany 62 years ago, going from his native country to London, England, where he remained about two years, when he came to the United States. Arriving here he entered the employ of Hermann Boker & Co., New York, with whom he had been continually for 40 years, having long been the credit man of the house and head of the office force. His employers refer to him as an excellently well informed and valuable man to them and one who will be greatly missed. He is survived by a widow and one daughter.

JOHN S LENG'S SON & Co., 33 Murray street, New York, have just issued a compact comprehensive illustrated catalogue of Bicycles, Tires and Bicycle and Automobile Supplies, of 100 pages, thoroughly revised for 1906 business, containing the innumerable articles incidental to this line. A valuable adjunct to the main book is a trade price list of 56 pages, in which its contents, alphabetically arranged, gives in plain figures net trade prices (in a few instances, discounts), only lists being printed in the larger book. Thus a customer can be shown illustrations and descriptive matter unreservedly. As the little booklet is only 3-32-inch thick dealers have learned to use it mnemonically as a reminder in purchasing supplies and accessories.

SCHMIDT'S SIMPLEX FILING CHART.

THE accompanying cut represents the upper and lower portions of a chart intended for filing correspondence, invoices, accounts, &c., without the aid of card indexes. The chart is 14 inches square, with the entire alphabet on each of the four sides. The chart is designed to be framed and set in flush with the filing table, or to be hung up in a convenient location. The method of using is as follows: To obtain the number of any given name reference is made to alphabet at left of the chart. Finding the first letter of a given name, follow that line to the right and stop under the letter at the top, which is the second letter of the name; the number in that square is the key number. Referring to the alphabet at the top and finding number under the third letter of the name, a combination is obtained. Thus in Black, BL will give the key number 38, while A will give the number 1, or the combination number 38-1. This in practical use has been found sufficient to file accurately and quickly any number of papers. After each paper has been numbered with blue pencil near the top it is an easy matter to arrange the papers numerically, the numbers only being marked on the papers, without the letters they represent. When this has been accomplished folders or guide cards are made for the filing cabinet or case to receive the papers. To arrange a simple file the guide cards or folders are marked for the papers already numbered. Thus if the first name of the group is Adams number thus, $\frac{\text{AD-A}}{\text{4-1,}}$ if the next is Allcock $\frac{\text{AL-L}}{\text{12-12,}}$ &c. If more than one name is under $\frac{\text{AD-A}}{\text{4-1,}}$ such as Adams, Adamson, Adamite, &c., they are placed in their alphabetical order under AD-A. It is suggested as desirable to build the file as papers are received, as this will avoid having guide cards or folders for which papers may never be received. Except for the removal of papers when file is full, it is stated such a file will last for all time. This method controls an unlimited number of papers, there being no limit to its elasticity. The use of index cards is avoided and with it the cost and expense of maintaining cards, as well as the time expended in compiling the index and keeping it up. Mr. Schmidt remarks that it is of some importance to a business with an ever varying lot of names to have the records filed correctly and quickly and to be able to reach them years after in a moment without the aid of index cards; nor is it necessary to refer to the chart when wishing to withdraw a paper from the file, as the guide cards or folders being lettered and numbered permit of finding the paper according to alphabet. This chart has been thoroughly tested, having been in use by leading Hardware firms of New York City for years and governing from 10,000 to 20,000 accounts to their satisfaction. The chart, for which a copyright is pending, was compiled by C. Schmidt, 46-48 Ridge street, New York, from whom copies can be obtained for $1 each. Directions for use accompany each chart.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	
A	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	A
B	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	B
C	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	C

X	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	X
Y	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	Y
Z	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	Z
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	

THE IRON AGE

Schmidt's Simplex Filing Chart.

Hacker, Ide & Price have succeeded Millis-Price Hardware Company at Spokane, Wash.

DELAWARE HARDWARE ASSOCIATION.

A MEETING was held at Dover, Del., on Friday, 23rd inst., at which a number of representative merchants discussed the practicability of forming a State Association for the purpose of looking after retail interests. R. R. Williams of *The Iron Age* was present on invitation, and advised the conference in regard to the association movement generally and the work of organization in other States. An interchange of views was had in regard to the objects and aims of such an association and what might be accomplished through it. Another meeting will be held in the near future, the date of which will be duly announced in these columns, when it is hoped formally to get the association under way.

HAMDEN MFG. COMPANY.

HAMDEN MFG. COMPANY, Wallingford, Conn., has just taken possession of an addition made to its plant, which had been inadequate to the increasing demands of the company's trade. The plant is being operated with a full force and all the departments are also working nights. The company's export trade has been especially good for the past six months, particularly in Bit Braces. The business of this company was established 95 years ago, and during that time, we are advised, a strike or difference with its employees has never occurred, the policy of the company being to keep constantly in mind the comfort and welfare of those employed in the shops. Conferences, with a modest little banquet, are held several times a year, in which the officers and the men mingle together and freely discuss the details of the business, to their mutual advantage.

SWANK HARDWARE COMPANY'S FIRE.

THE extensive establishment of the Swank Hardware Company, Johnstown, Pa., was destroyed by fire early Wednesday morning, 28th inst. The loss is estimated at $300,000, partly covered by insurance. The company will appreciate the attention of manufacturers in promptly forwarding catalogues and discount sheets.

ROBERT EIKEL on March 1 became associated with the Peden Iron & Steel Company, Houston, Texas. During the past seven years Mr. Eikel has been identified with the F. W. Heitmann Company of Houston, and prior thereto was with the Eikel-Breustedt Company of Waco and with Walter Tips of Austin. Mr. Eikel is connected with the purchasing department of the Peden Company and will give special attention to the company's mill supply line.

KEYSTONE WIRE MATTING COMPANY, Beaver Falls, Pa., has not disposed of any part of its interests, and is still manufacturing the Keystone Steel Mats and Matting, as has been the case continuously for upwards of 11 years. The company states that some misleading announcements concerning it have been circulated, and desires to correct any unwarranted impressions which may thus have been created.

ED. FORD ON TRADE QUESTIONS.

Letter No. 2.

Manufacturers and Retailers.

To the Editor: The manufacturer realizes that the retailer is the distributer of goods and that the retailer can increase the demand or retard the sale as he elects, and although the volume goes to the jobber direct from the manufacturer the latter orders only such goods as the retailer demands. Hence the manufacturer depends on the good will and co-operation of the retailer and not the jobber.

The jobber, however, is not only a convenience, but a necessity for both manufacturer and retailer, and most of the Hardware now sold, especially the smaller items, can be distributed more conveniently and economically through the jobber than any other way.

A few jobbers in the past have been sensitive lest the manufacturers sell the retailers direct, but no such plan is contemplated by manufacturers, as the retailers are now buying direct nearly all the goods they profitably can. Furthermore, it is hardly consistent for jobbers to complain of the manufacturer selling direct to the retailer when they are themselves posing as manufacturers. Until they discontinue manufacturing they make themselves appear ridiculous in demanding that manufacturers refrain from selling the retailer.

Many jobbers are now designating their business on letter and bill heads as "manufacturers and importers," "manufacturers and jobbers," &c. Why should not the manufacturers pose as do the jobbers—"manufacturers and distributers"?

All should be fair and reasonable to accomplish the desired results.

It is a mistake, I believe, for the jobber to try to create friction between the manufacturer and retailer, and it will be much better for all to try to spread the feeling of brotherly love and create a feeling of good fellowship among all.

Retailers, as a class, and especially the associations, are on record as being heartily in favor of buying from the jobber rather than the manufacturer, and this is as it should be; but the manufacturer can assist the retailer in the distribution of goods to the advantage and profit of both jobber and retailer.

Because manufacturers as a rule do not come in close touch with the retailer there is not the co-operative feeling that might and should exist, and many retailers look upon the manufacturers as a class to be enemies rather than friends. On the other hand, some manufacturers never give the retailer a thought and do not seem to care to assist him in his troubles; but this condition can be largely overcome by better acquaintance, for all should work along the same lines for the betterment of trade conditions.

Then why not the retailer, jobber and manufacturer all work in harmony, for the discord of a few will work more injury than the majority can offset, as harmony is the strength of all institutions. ED. FORD.

LISK MFG. COMPANY'S CATALOGUE.

LISK MFG. COMPANY, Canandaigua, N. Y., is now distributing its annual illustrated catalogue, a handsome volume of more than 300 pages. A feature of the make-up is the printing of all stock numbers in red ink, so as to catch the eye immediately in running over the pages and assist the buyer in ordering. Many articles are shown in actual colors, and embossed pages of elaborate color design are inserted to introduce the different lines catalogued, including Antirust Tinware, Pieced Tinware, extra heavy retinned Stamped Ware, Aluminum Galvanized Ware, Nickelplated Copper Ware, Lisk's four-coated Enameled Steel Ware and Imperial Gray Enameled Steel Ware. In its introductory the company reiterates its policy of selling exclusively to the retail trade.

W. & J. TIEBOUT, 118 Chambers street, New York, have just issued a comprehensive illustrated descriptive catalogue, No. 11, of Launch Hardware and Supplies, containing 68 pages. While the house issue a much larger catalogue of Marine Hardware in general, the purpose of this one for indiscriminate distribution is to cover the various staple and new goods peculiar to launches, motor and similar boats. Provision is made for checking items in the book needed by the recipient, which may be returned to W. & J. Tiebout, who will in turn fill in net cash prices or discounts and again forward to the customer, thus affording an easy and quick way of getting quotations.

THE SEWING MACHINE IN THE HARDWARE STORE.

A Good Line for Retailers.

BY E. T. K.

THERE is no earthly reason why the average Hardware retailer should not handle Sewing Machines. As a matter of fact, there are a great many reasons why he should.

A Sewing Machine is something that is always of interest to a woman, and there is no housekeeper who has not at some time contemplated the purchase of a Sewing Machine, either to fill a vacancy in her household, or to supply the place of a Machine at present doing duty there.

The Hardware dealer sells Stoves, Kitchen Utensils and many articles of house furnishing which appeal particularly to women. There is no reason why he should not go a step further and round out his lines by handling an up to date line of Sewing Machines.

The Sewing Machine incidentally carries a good profit with it. It's attractive—it makes talk.

Of course, discrimination must be used in selling the right kind of a Machine. It must be one sufficiently well made to stay sold after delivery, and one in which repairs will be slight and unimportant.

IT'S EASIER TO SELL A MACHINE

with a reputation than one without, and an advertised Machine is more easily disposed of than one whose name and makers are practically unknown to fame.

The Hardware dealer will find that the further away he gets from competition with the so-called mail order house the better for himself. There is nothing in it for the dealer to handle a Machine that can be bought for $11.98 or thereabout by mail.

It's possible to make any Machine look well on paper. Just how it is put together, and just what its limitations are in the way of work is something which will show up after it's been paid for by the purchaser.

WHAT THE DEALER MUST LOOK OUT FOR

is a thoroughly well made Machine, giving the widest range of work possible for the price and sold at a decently profitable figure.

The retailer has an advantage that the mail order house has not. *He can show the goods and demonstrate their superiority*, and then confidently look his customer in the face, and say "Yes; you can get something that looks something like it on paper for $11.98, and this one costs a whole lot more, but it's worth the difference and really saves you the money in the long run, as well as giving you better service from the start."

CHICAGO HARDWARE SHOW.

THE committee in charge of arrangements for the Chicago Hardware Show, the name by which the exhibit section of the Illinois Retail Hardware Association will be known, is already taking active steps toward the distribution of the space in the Coliseum, where the show will be held next year. G. R. Lott is the chairman of this committee and is receiving requests for space reservations, which will be rented at the rate of 25 cents per square foot. The public will be charged an admission fee of 50 cents. Three or four hundred exhibitors are expected to be represented and it is expected that all space will be disposed of by August next. The convention and show will be held February 13, 14 and 15, 1907.

Correspondence.

MANUFACTURERS' TRADE NUMBERS.

To the Editor: The indifference shown by many manufacturers in adopting trade numbers for their product prompts the writer to enter a mild protest against the lack of system or carelessness which seems evident in examining the catalogues of many standard lines of Hardware, and which results in annoyance and expense to the jobbing and retail trade. This could be avoided had the manufacturer exercised only ordinary care, or used the same good judgment in adopting trade numbers that is generally shown in the manufacture of his product.

There seems to be a marked indifference in cataloguing and adopting trade numbers. Many manufacturers, whose product is recognized as of a high class, entirely ignore the system or catalogue of their competitors and make up their own list regardless of the number that is used by others in the same line.

HANDLED HAMMERS.

To illustrate more clearly let us take the line of Handled Hammers. The catalogue or trade numbers of all the prominent manufacturers seem to be sadly in need of revision, for the same numbers appear in many lines, but in no case do they designate the same identical goods.

To avoid making use of any manufacturers' names, the writer will refer to four leading makers as A, B, C and D. If we refer to Nail Hammers in the catalogue of A we find that No. 21 represents an ordinary No. 2 Adze Eye Hammer polished. The same number in B's catalogue is a size 1½ nickel plated, with a hickory handle, while C uses it to designate a size 1 nickel plated Hammer with ebony handle, and D applies it to a Plain Eye Nail. Here we have four Nail Hammers, all of the same trade number, and yet no two Hammers are alike.

Another, No. 81, seems to be a favorite. In the catalogue of A it represents a Brad Hammer; in the catalogue of B a Nail Hammer of a second quality, while in the list of C it designates a first-grade Nail Hammer, and D uses it on a Ball Pein Hammer.

Should one receive an order for No. 160 Hammers he would not know whether to send a Ball Pein, a Farrier or a Tack Hammer; while No. 311 represents, respectively, Turning, Ball Pein and Prospecting Hammers. It all depends whose catalogue you would use.

IN SASH CHAIN

the manufacturers would do well to adopt a standard system of numbering. A Red Metal Chain designated by a large manufacturer as No. 0 is classed by maker B as a No. 1; while C catalogues it as No. ²/₀. The No. 1 Chain of A when wanted in steel he designates as No. 2, yet he uses this very same number for a Red Metal Chain of a heavier weight. The buyer of Chain must necessarily study the catalogue of different manufacturers carefully, and the changing of the line results in confusion and much annoyance. No brand appearing on the article and as practically all manufacturers' prices are uniform for the same grade and quality, the lax system of numbering ofttimes results in costly errors.

Quite recently a manufacturer of

COFFEE MILLS

placed on the market a new Mill which he designated as No. —, using the very same number of a Mill made by a competitor and recognized by the trade as belonging to that manufacturer, he having used it for upward of 30 years. The adopting of such number was unnecessary. The Mills were quite different, yet if one maker has had in use a certain number and covering a long period of years, why adopt that same number for an article which is different in construction? It is not always advisable from a jobber's standpoint to carry two articles of the same number. Errors are bound to result.

ICE SKATES.

The manufacturers of Ice Skates could also improve their system. In the catalogue of a prominent maker No. 16 represents a common lever Skate, generally jobbed at 42 cents per pair, while the same number in a competitive line designates a heavy clamp Hockey, jobbed at $3 per pair. The No. 52 of one maker is a common Ladies' Skate sold at 68 cents, while another uses that number on a high grade clamp Skate jobbed at $2.90. A third manufacturer, although recognized as one of the leading makers, has no numbers whatever, so one must always give the style, the grade, state whether plain or nickel and the size. How much simpler it would be to say, "One pair Skates, No. 999, 10½-inch," instead of asking the jobbing and retail trade to write in full something like the following: "One pair lock lever heel button Skates, grade 5, 10½-inch."

Numbers cost nothing, but when properly applied to any article they prove of much benefit to the trade, in that they reduce the possibility of error to a minimum and save considerable work in the entering, the laying out and the billing of orders. How much easier it is to recognize an article by a number distinctly noted on the label than be forced to read carefully most all of the descriptive matter.

In the Hardware trade there are

A GREAT MANY LINES

where the system of numbering is decidedly weak. The writer only gives a few instances where an improvement can be made, yet it would be but little work to cite dozens of different lines where the same criticism would apply. Many manufacturers recognize the fact that a good and simple system of trade numbers is most desirable for themselves and their customers, but an experience of many years prompts the statement that there are many manufacturers who regard trade numbers as of little or no consequence and that they are not essential to modern business methods, and it is this class of manufacturers of whom the writer asks a careful consideration of the few facts which he has outlined.

WHERE GOODS ARE STRICTLY COMPETITIVE—

i. e., of the same size, grade and finish, and where the trademark or manufacturer's name is of no importance, a uniform system of numbering is desirable, so that if one may want to order he may safely send to any manufacturer of such line and be certain of getting what is wanted. To those who make extended lines and where the brand or trademark is an important factor the suggestion is offered that such manufacturers do not use the same numbers as their competitor, nor use similar numbers on entirely different classes of goods. Respect your competitor's catalogue and trade numbers and adopt as your own such as do not conflict.

If the manufacturers, through their association or as individuals, would take a little time to look carefully into this subject the writer is of the firm belief that a decided improvement could be made, one which would result in much benefit to the trade, in that errors would be less frequent and a standard adopted that would soon result in doing away with the many annoyances, extra work and expense which occur under the system, or rather lack of system, in vogue at the present time.

MERCHANT.

A Hardware Bill of 1860.

To the Editor: I was very much interested in the old-time bill of Belknap Hardware & Mfg. Company, to which reference was made in your issue March 1. I have before me a bill dated October 16, 1860, to Caesar Knott, Jordan, Minn., from Nicols, Dean & Co., St. Paul, Minn., with the following items and prices:

Sugar Kettle, per pound	$0.07½
Shears, per dozen	6.50
Scissors, per dozen	4.25
Steel Squares, per dozen	20.00
Hay Knives, per dozen	17.00
Horseshoe Iron, per pound	.09
Horseshoes, per keg	10.00
Copper Bottoms, per pound	.36
Fry Pans, per dozen	5.00
Japanese Lanterns, per dozen	7.50
Miners' Lamps, per dozen	2.65
No. 8 Stoves, each	18.75
No. 7 Stoves, each	16.75
1-inch No. 8 Wood Screws, list, 12 per cent. discount	.50

Blossberg Coal, per ton	15.00
⅝ Nuts, per pound	.20
⅝ Nuts, per pound	.18

This invoice was returned to us by Mr. Knott on the occasion of our fiftieth anniversary in May a year ago. The invoice was made out by William B. Dean, the present head of our firm. NICHOLS, DEAN & GREGG.

ST. PAUL, MINN., March 10, 1906.

EXHIBITS AT HARDWARE CONVENTIONS.

To the Editor: Referring to the matter of exhibits by manufacturers at the annual conventions of Retail Hardware Associations, we should like to say that we think this plan is a very good one for each State Association to adopt for say, about two years, at any rate, not to exceed three, after which time it ought to be dropped. Now the reason for this is that we believe that the novelty will have entirely worn off by the end of three years, and that furthermore the majority of the members of the associations will have seen everything that the manufacturers have to offer, consequently there will be no special object for the manufacturers to go to such a vast amount of trouble and expense. Furthermore, the manufacturer will be

UNABLE TO STAND THIS EXPENSE.

for more than two or three years at the outside on account of the fact that there are now something like 25 States having Retail Hardware Associations, and more of them organizing every year. Consequently if the manufacturer exhibits at each and every meeting it not only means the expense of the installation of the exhibit, either in a room in a hotel at anywhere from $10 to $50 per day, or sufficient space in a hall engaged for the purpose by the association, which costs a plenty. We know of one manufacturer who paid $75 for his space this year at one of these meetings, and it was not the largest space in the hall either. The same manufacturer paid $40 at another State exhibit, and he had one of the meanest, smallest spaces in the lot.

A MANUFACTURER NECESSARILY FEELS

that there is not much use in kicking because the dealers have put an arbitrary price on these spaces, and furthermore, he does not think it is policy to kick, because if he did that would offset, to a certain extent, the effect of his advertising.

It requires the presence of from two to half a dozen representatives at each exhibit for the purpose of meeting the customers and trying to take orders enough to cover expenses. The hotel and entertaining expense of each ope of these representatives is naturally considerably more than it would be if they were on their regular selling trips, and of course their salary goes on just the same.

We have made the following estimate of what it would cost the average manufacturer to have an exhibit at each of the State association meetings during the year 1906:

Average space	$50
Salary three men one week	100
Hotel expenses three men one week	100
One-page ad. in programme	25
Railway transportation for men and exhibit	50
Incidentals, putting up exhibit, entertaining, &c.	25
Total	$350

Now we believe that any manufacturer in the country will agree with us that this is a very mild average. Of course, there are some whose total expenses are much less, but we will venture to say that the majority of manufacturers who have exhibited at various convention halls and hotels this year have done so at a cost nearer $500 than $350, and if the expense is $350 in each State, you can readily see that the total for the year would be $8750. Now say that we cut this in two, which would leave an expense of $4375. Pretty expensive advertising, is it not?

We do not say for one moment that it is not good advertising. In fact, we think that it is

A FIRST-CLASS PROPOSITION.

for any manufacturer, especially one who is introducing new goods or who is going into a new territory with his line, and, as stated at the outset, it will be good advertising for him for a year or two, but we hope and believe that the year 1907 will see the wind-up of the "World's Fair" proposition, because at that time the scheme will have reached its height in novelty, expediency and expenses, and we therefore trust that the Retail Associations will have invented some other scheme to separate their friends from their money.

We have written the above with all good feeling toward the Retail Associations, because we believe in them and want to see them prosper. We believe that they have done more good for the average country Hardware merchants than any other proposition that has ever been thought of. The large attendance at the meetings this year, together with the intense interest shown by the members in their attendance upon the sessions and in the papers that have been read on various subjects, is evidence in itself that these associations

ARE A GREAT POWER FOR GOOD

and will no doubt be the means of largely improving conditions for the retailer. We hope to see, therefore, at an early date, every Hardware dealer in every State belonging to his State Association, and thereby getting all the benefit he can out of it, but we do not believe that there will be any need of exhibits of the wares of manufacturers and jobbers at these meetings, or for advertising in the programmes, after the year 1907.

We would like to hear from other manufacturers, jobbers and merchants themselves on this same subject.

MANUFACTURER.

WESTERN HARDWARE & METAL COMPANY.

GEORGE BOOLE, formerly associated with the Schwabacher Hardware Company, Seattle, Wash., has formed a corporation under the name of the Western Hardware & Metal Company. The new concern has purchased the stock of heavy Hardware, iron and steel, mining, mill and lumbermen's supplies, etc., carried by Dunham, Carrigan & Hayden Company in Seattle. The company does not succeed Dunham, Carrigan & Hayden Company in any way, but will carry on its own business in the location formerly occupied by that company. In addition to the stock already carried by Dunham, Carrigan & Hayden Company, as soon as possible a complete line of Shelf Hardware and Tools will be added so that when this is accomplished the Western Hardware & Metal Company will become a strictly jobbing Hardware house. Mr. Boole has surrounded himself with a good corps of help and associates, and as the Northwest territory is growing very rapidly the company expects to get its share of the trade. Mr. Boole, in this new departure, will have the best wishes for success of a host of friends.

MADDEN & MORRISON FILE COMPANY.

MADDEN & MORRISON FILE COMPANY, organized several months since with a paid in capital of $60,000, has succeeded the Madden File Company, Middletown, N. Y. This is the business which was originally established by King, Cockayne & Co. in 1857, whose successors were consecutively Wheeler, Clemson & Co., Madden & Cockayne File Company, Eagle File Company and Madden File Company. The new company has already made some extensive improvements in the plant and equipment, and the output has been materially increased. The demand for the Madden File manufactured by the company is, however, such, we are advised, that further enlargement of facilities is necessary, and plans are making for an expansion in the capacity which will double the present considerable output of Files. Frank M. Madden is president of the new company, and John H. Morrison secretary and treasurer. Mr. Madden, who is descended from a family of File and Saw makers, is well known to the wholesale Hardware trade, having traveled extensively in the United States and Canada.

THE PACIFIC HARDWARE & STEEL COMPANY, San Francisco, Cal., has opened an office in Chicago at 40 Dearborn street, in order to be in closer touch with the manufacturers of the Middle West.

National Retail Hardware Association.

CONCLUDING REPORT.

E. M. BUSH,
President.

THE question of admitting the legitimate dealers in sporting goods to membership in State Retail Hardware Associations was discussed at the Wednesday morning session. A resolution was adopted recommending that the various State associations take some action looking toward the admission of legitimate sporting goods merchants as members of these organizations.

A resolution presented by C. A. Peck of Wisconsin, which was unanimously adopted, congratulated President W. P. Bogardus for his very wise selection of members of the Joint Committee.

Mr. Bush on Legislation.

An able address on "Legislation" was delivered by E. M. Bush, which was in part as follows:

Retailers throughout the country are vitally interested in any remedy that will prevent the depleting drain of the catalogue house on the small communities and in the enactment of laws that will compel those firms doing a retail mail order house business interstate and interurban in character to stand some just proportion of tax or license to be paid into those localities from which their business is derived. Just how to draft a law to this effect which would be constitutional is beyond my knowledge, but that it would be just I believe that all will admit. Perhaps all have not yet reached such a degree of enlightenment and development as will enable them to think that the tax-paying citizen who assists in building up a community has some rights which the outsider—the freebooter who, in order to sell, misrepresents the quality, quantity and value of many of his wares—should be compelled to respect.

The tax or license referred to may not be feasible, but something must be done to stop this drainage of money from the smaller communities.

SUCH THINGS CAN BE DONE

—are being done every day. Who a few years ago would have disputed the fact that railroads were private property, to be administered according to the sweet will of those in authority? Yet to-day we see the sentiment growing that the people are to be considered by the powers that be—else whence comes this discussion of railroad rate regulation? What brought about the recent adjustment of a coal strike to prevent injustice to the American public? Whence the discussion filling late newspapers relative to a prospective coal strike? Ponder these things well.

Unless I mistake greatly the intelligence and fair-mindedness of our people, there is now springing up—perhaps hardly perceptible, but stirring into life—a sentiment against the favored centers of trade which congest population in their own fevered centers and draw the very life blood from smaller urban and rural districts wherever their long tentacles can reach.

W. P. BOGARDUS,
Ex-President.

THE HOPE OF OUR COUNTRY'S FUTURE

lies in developing these smaller urban and rural populations, in making ours a country of homes, not tenements—a people content with their surroundings. Free rural delivery was a step in the right direction, but if it is prostituted to further this tendency of congesting population and centering great wealth in large cities by the passage of the parcels post measure there will be much lost for which we have striven, and stringent laws of necessity may be passed for the benefit of the many as against the few.

S. R. MILES,
First Vice-President.

I need not dwell upon the importance of your opposition to the passage of this parcels post bill. We all recognize in it class legislation—a measure for the benefit of the few mail order houses as against the interest of hundreds of thousands of retail merchants all over the country—against the interest of the communities which these merchants have helped to build up and make prosperous, and the rural districts whose wide farms are dependent in many ways on the

PROSPERITY OF THE LITTLE CITIES

which they surround. Shall these all be impoverished that seething centers of trade shall become even more congested? This organization may congratulate itself upon the very important part it has taken in educating all other classes of merchants against this iniquitous parcels post.

We should oppose the measure now before Congress to consolidate third and fourth class mail matter, as it is only an opening wedge for parcels post.

Some changes could well be made in postal rates—1 cent letter postage, weekly and daily newspapers, read now so universally, at even a lower rate, but periodicals and monthly magazines at a higher rate than they now pay.

TRUTH AS TO QUALITY.

We have just witnessed the passage by the Senate of a pure food law—how soon will come the passage of a law requiring every manufacturer to state truthfully the quality of his wares, when the manufacturer of a tea kettle or coffee pot (for instance) can no longer state, "This is an all-copper pot," when the breast or some other part is steel?

Retailers in their advertisements should also be made to tell the truth. I know of no retail Hardware merchants who advertise misrepresentations, but I have read the ad. of a house which to sell its paint lied. This must end. Does it seem asking for an immediate millennium? Gentlemen, think only of what has been done.

CONTROLLING SELLING PRICES.

Some manufacturers who market patent articles and others with established reputations are attempting to control the retail price. When this is done with due regard to the profits of those through whose hands they pass and without injustice to the consumer, should the effort not be encouraged by legislation if possible? Certainly these manufacturers of patented articles and of goods of long established reputation have great interests at stake and should have the right to establish a minimum selling price.

We know the tactics of certain mail order houses to whom manufacturers have refused to sell, because the demoralizing prices made by them destroy the market value of the goods.

To destroy still further these values, to get even with the manufacturer who refused them goods, these firms catalogue such goods at cost and even less, knowing all the time that they cannot fill an order and cannot legitimately get the goods. And still the consumer knows the legitimate retailer is "robbing" him, because a catalogue house says so. Is there no law to prevent this injustice and destruction of property? If not, we should demand one.

GEO. W. ROCKWELL,
Second Vice-President.

A. T. STEBBINS,
Treasurer.

THE MODERN METHOD OF INTRODUCING GOODS

to the consuming public through advertising calls for a large expenditure of money. Since in many cases the manufacturer who makes the goods creates a demand for them by this vast amount of advertising, for which he pays, has he not ethically and lawfully a right to say that the value of his property shall not be destroyed by price cutters?

When a retailer going into business, either Hardware or otherwise, is called upon by those extending credits for a statement of his assets, should it not be a criminal offense for him in reply to make false or misleading statements? More than the wrong to individual creditors is the injury to legitimate retail interests, which must compete with receivership and bankrupt sales, easily avoided had true conditions been known. It would lighten our woes considerably could we also establish

AN X RAY COMMISSION

to make investigations of capacity and ability as well as assets. Is there a genius in my audience who could frame such a law for the relief of suffering competitors?

The present bankruptcy laws are, however, I believe, as a rule, satisfactory. The customers of our firm who have taken advantage of this law are so few and the amounts involved so small that we have had no personal experience with the law.

M. L. COREY,
Secretary.

BUT LAWS, HOWEVER FAVORABLE,

cannot in these strenuous days of competition make a business success. It's up to us to keep abreast of the times, with stores well stocked, goods properly bought and well displayed by the use of modern shelving, cases and counters, with attentive salesmen interested in their work, with proper regard for your home competitor, but a grim determination that no money for Hardware shall be sent away from home, with the proprietor in the foreground to greet with a smile or handshake those who pay him the compliment of trading at his store and a watchful care that every customer receives prompt and courteous treatment and a dollar's worth of goods for every dollar spent.

A general discussion followed and several of the delegates advocated the adoption of a resolution condemning the present bankruptcy law and urging Congressmen and Senators to further legislation looking toward its repeal.

President W. P. Bogardus appointed additional committees to those given in our last issue as follows:

RESOLUTIONS.—S. S. Bryan, Titusville, Pa.; J. F. McGuire, St. Paul, Minn.; E. H. Myers, St. Louis, Mo.; G. W. Rockwell, Horseheads, N. Y.; J. Murphy, Racine, Wis.; C. A. Ellis, Carlisle, Ind.; F. W. Ingalls, Bryan, Ohio.

NOMINATIONS.—H. G. Cormick, Centralia, Ill.; A. L. Severance, Oklahoma City, Okla.; M. S. Mathews, Minneapolis, Minn.; Nathan Roberts, Omaha, Neb.; D. F. Barber, Boston, Mass.; A. R. Sale, Mason City, Iowa; S. R. Jones, Richmond, Ind.

LEGISLATION.—C. B. Frame, North Manchester, Ind.; L. C. Abbott, Marshalltown, Iowa; E. H. Ramm, New London, Wis.; W. H. Clark, Lakefield, Minn.; G. W. Wolbert, Bismarck, N. D.; F. F. Porter, Chicago, Ill.; J. R. Sower, Frankfort, Ky.

CONSTITUTION AND BY-LAWS.—L. F. Holloway, Fremont, Neb.; G. W. Thompson, Mt. Jewett, Pa.; E. M. Bush, Evansville, Ind.; W. H. Millard, Cherokee, Iowa; F. B. McKenney, Rockford, Ill.; A. Unfug, Walsenburg, Col.; N. Keller, Woonsocket, S. D.

PLACE OF NEXT MEETING.—F. W. Lucas, Litchfield, Minn.; L. Kinderman, Boonville, Ind.; F. H. Smith, Nebraska; F. E. Pelton, Herkimer, N. Y.; F. A. Bare, Mansfield, Ohio; Fred. Giessing, East St. Louis, Ill.; J. M. Selheimer, Lewiston, Pa.

NATIONAL INSURANCE.—H. F. Emery, Fargo, N. D.; J. H. Whitney, Merrill, Mich.; S. R. Miles, Mason City, Iowa; Hank Williams, Hot Springs, Ark.; Julius Schmidt, Wabasha, Minn.; H. E. Gnadt, Chicago, Ill.; H. F. Krueger, Neenah, Wis.

FINANCE.—G. W. Rockwell, Horseheads, N. Y.; J. Kornely, Milwaukee, Wis.; Fred. Bartholomew, Michigan City, Ind.; C. H. Williams, Streator, Ill.; C. H. Casey, Jordan, Minn.

Retailers' Attitude Toward Manufacturers.

"What Attitude Should We as Retailers Take Toward the Manufacturer?" was the topic of a paper presented by A. H. Abbe of New Britain, Conn., on Wednesday afternoon. Among other things he said:

One thing certainly I believe the retailer should insist upon, and that is that the manufacturer should see to it that no retailer buys his goods at the jobbers' price. I believe that the large buyer in the retail business is entitled to a small percentage for quantity and this percentage should be so small that it would not cut any figure in the price of goods. We should also insist that the manufacturer discontinue the practice of shipping direct to the retailer's customer, the consumer, as I understand many manufacturers ship direct from the factory to the consumer upon the order of the catalogue house. I feel that the retailer should confine his purchases to goods manufactured by people who show by their actions that they appreciate his business and want to hold it. The proper distribution of goods should be from the manufacturer to the jobber, the jobber to the retailer, the retailer to the consumer.

Relation of the Retailer to the Jobber

was the subject of an address delivered by H. F. Emery, president of the North Dakota Hardware Association, from which we make the following extracts:

In analyzing this question we find that the retail Hardware merchants are divided into three classes: First, the small dealer who employs not to exceed $2000 capital, doing a credit business, trying to carry an assorted stock with a limited amount of yearly business. This merchant is by the condition of things bound to go to a jobbing house for his supplies, and our advice to him is stick to one good jobber and he will see you through.

H. J. HALL,
Executive Committee.

SECOND TO BE CONSIDERED

are those who have at their command a large capital. They are a class by themselves and must be taken as individuals, for no rules can apply to them, as they are in a position to go upon the open market and buy where they wish and of whom they wish.

THE THIRD CLASS

is made up of the great army of merchants scattered through the length and breadth of our land, having from $5000 to $20,000 in their business, and maybe in a large part trying to do a greater amount of business than their capital justifies, when we take cash discounts into account. These merchants are in a position to buy goods from the manufacturer, but are not large enough to avoid keeping close to the jobber in order to replenish their stock very often. The relationship between a merchant of this class and his jobber ought to be very close. He should be absolutely honest in his statements and keep his jobber posted to such an extent that the greatest confidence exists between them.

D. FLETCHER BARBER,
Executive Committee.

MUTUAL.

From these viewpoints we see that the relation between the retailer and the jobber is absolutely mutual. It is a good merchant who can successfully compete against illegitimate competition, but let our competition be what it may, in the swift age of changing conditions all must be alert, up and doing. The jobber says, "Keep your stock in shape and meet the price," and this opinion is held by several members of our organization.

Future Association Work.

A. T. Stebbins, Rochester, Minn., read a paper on "Suggestions as to Future Work." He said:

I would say that organization and co-operation must be our watchwords if we expect to accomplish results. Let us then for a moment consider the question of organization. There are at present but 25 States affiliated with the National Retail Hardware Association—scarcely more than half—even though Oklahoma and Indian Territory should by the grace of Congress be admitted as one. Should not then our attention be given to the organization of all the States and Territories? With the growth and splendid showing of our association it would seem to be a comparatively easy task to accomplish. Hardware merchants North, South, East and West are numbered among the progressive and foremost of our American citizenship. They are not slow to grasp a situation.

IT ONLY NEEDS A LEADER,

some one to issue a call, and when once assembled and the situation fairly presented, in the light of present conditions and achievements already accomplished, organization would surely follow. My suggestion as to our future work would be that this association take up this work at once, to the end that next year when we meet we may have double the representation that we have this year. Local organizations should be recommended and encouraged.

H. L. McNAMARA,
Executive Committee.

ANOTHER JOINT COMMITTEE NEEDED.

There are other matters in which we are vitally interested and which need another joint committee. I refer to the law making power of the country, which at present seems to be owned and controlled by corporations. So far we have been successful in having action upon the parcels post bill deferred. The thanks of the merchants of the entire country are due in a great measure to the officers and members of the Executive Committee of this association, but other momentous questions are involved, such as discriminations by gigantic corporations and the growing power of the trusts.

Another suggestion, then, would be the organization of an affiliated association composed of delegates from the various national trade associations, viz., the druggists, grocers, Hardware or any other whose interests are similar, or at least a joint committee composed of a delegate from each of these associations, to look after matters of general interest in Washington.

Work that Might Be Done.

Charles H. Williams, Streator, Ill., had for his topic "What Work We Might Do that We Are Not Doing," and among other things he said that the Hardware association movement had not trailed along any beaten path made by older organizations, but that it has hewed its own way, combining the best ideas offered, weeding, sifting, weighing and moving with stability, self-respect and dignity. He said that the field was still open for doubling the present membership in the National Association and that eternal watchfulness and work are necessary to prevent unfair legislation in the interest of the few against the many. Referring to the matter of education, he said: "Along the line of mutual education, I believe that most of our members need to improve in knowledge of advertising and salesmanship and in the training of salesmen, and with all our suggestions for work there is one thing that we must not lose sight of—a great proportion of our present strong position is due to the untiring work of our secretary, and with our continuous growth the work gets heavier, and I am sure that I voice the sentiment of every one present that along with all suggestions for work, we intend to include with them the understanding that such assistance must be given him, that he be somewhat relieved rather than have more work crowded upon him."

Recommendations of the Suggestions Committee.

Reports of committees were received on Thursday morning. The Committee on Suggestions recommended that the association consider the advisability of issuing the *Bulletin* monthly, and this matter was referred to the executive committee for action. It also recommended that the different State associations encourage exhibitors at the annual conventions, and that these organizations so arrange the dates of their meetings that they will not conflict with that of the National Association. The question of the National Retail Hardware Association affiliating with the National Board of Trade was referred to the Executive Committee for action.

G. R. LOTT,
Executive Committee.

Mutual Insurance Report.

C. H. Miller, Huntingdon, Pa., submitted the report of the Fire Insurance Committee. He said that the year just closed had been the most successful of the National Retail Hardware Insurance Company, that it showed a decrease in expense and loss ratio over the first two years, and that the dividends for the year had averaged 32 per cent. The total amount of insurance carried by the Hardware mutuals, according to the various statements issued by them January 1, 1906, was $7,625,306.91, and assuming that the membership is 7000, there would be an average of $1090 insurance to each member. The report of the Insurance Committee recommended that the surplus fund be guarded well and not reduced too much in order that a large percentage of the premium be returned to the policy holders.

The Auditing Committee reported the accounts of the treasurer in good condition, and the Committees on Legislation and By-Laws had no recommendations to make.

Resolutions.

The following resolutions were reported and adopted:

That we recommend that our association continue opposition to the extension of the parcels post system, and that the State secretaries communicate with each member of the State Association that they request their United States Senator and member of Congress to oppose such legislation.

That we approve the course of President Roosevelt on rate legislation and freight discrimination, and would recommend that the Legislative Committee of this association take proper action to carry out the sentiments of this association on these questions.

That this convention direct its secretary to send a letter to S. Norvell, of the Norvell-Shapleigh Hardware Company of St. Louis, expressing its confidence in its method of doing business and its attitude toward this association.

Inasmuch as the Retail Hardware Associations of the country were founded to conserve and promote the best interests of the retail Hardware trade, and

Whereas, They do conserve and promote these interests; and

Whereas, Officers and committees are elected to facilitate this work; and

Whereas, Said officers and committees are supposed to acquaint themselves with actual conditions and movements in the trade; and

Whereas, The members themselves of their own free will periodically bestow upon these officers and committee members these positions of confidence and trust; therefore be it

Resolved, That we advise all retail Hardware merchants of the country, before sending to the trade press criticisms of a personal nature and of policy or methods of officials and committee members, to confer with some official, preferably with the secretaries of their respective State Associations, thus acquainting themselves with actual facts.

Inasmuch as we have positive information that it is the custom of a certain Hardware trade paper to veil criticism and attacks under anonymous communications; and

Inasmuch as we consider this practice cowardly and detrimental to the best interests of the retail Hardware trade: therefore be it

Resolved, That we do hereby condemn the practice and recommend that all editors of trade papers insist upon the use and appearance of the name and address of the authors of communications so published, and of any committees working in conjunction with said association or of jobbers and others favorable to our interests; and be it further

Resolved, That we recommend to all Hardware merchants that they give no credit or credence to any anonymous criti-

cisms of the officers of the association and their committee members and friends.

Resolved, That we heartily commend the work done by United States Senator Macomber of North Dakota, in passing a National Pure Food law through the United States Senate, and would suggest that all Congressmen be urged by each member of our State Associations to support such a measure, and we further suggest that the secretary of the National Association send a copy of this resolution to each member of the House of Representatives.

That we recommend to our State Associations that they control the exhibits at their State conventions, and we further recommend to the Executive Committee of each State Association that they confer with our National secretary and attempt to fix such dates for the various State conventions as will be for the best interest and convenience of all concerned.

Resolved, That we express our appreciation of the attitude taken by A. R. Talbot, Head Consul of the Modern Woodmen of America, on catalogue house advertising, and would request that our members who belong to the various fraternal associations report any case of advertisements of catalogue houses appearing in the journals of any fraternal organizations, and write to the Executive Committee of such association requesting that it discontinue this class of advertisements because they are prejudicial to the best interests of the members of these fraternal organizations.

That we recommend to the Executive Committee of our association that they seriously consider the advisability of joining the National Board of Trade, as recommended by a letter from T. James Fernley, secretary and treasurer of the National Hardware Association, dated March 15, 1906.

That the thanks of this association be extended to their officers for their efficient services during the past year, recognizing that it is largely due to their untiring efforts that the State and National organizations have attained their present standard; and that the thanks of this association be tendered to the Chicago Retail Hardware Dealers' Association for the banquet and other courtesies extended, and to their genial toastmaster, W. H. Bennett.

Letter to S. Norvell.

The following letter was addressed to S. Norvell of the Norvell-Shapleigh Hardware Company of St. Louis:

The National Retail Hardware Association, here assembled, in reply to yours of recent date would say we appreciate your offer to pay the expense of a committee to your place of business for the purpose of investigating certain reports that have been published concerning your method of doing business. We believe these reports to be untrue in every respect, and were published for the purpose of sowing discord and discontent in the ranks of our association and for your personal injury.

We at this time wish to extend our heartfelt thanks to you as chairman of the Joint Committee, for the great amount of good that committee has accomplished, and assure you that we have the utmost confidence in the business methods pursued by your house and your attitude toward the retail dealers. Hence there is no occasion to send the committee you have suggested, and it is the sense of this convention that the success of the Joint Committee will be largely enhanced if you are continued as its chairman, and the convention assembled earnestly urge and instruct their delegates upon that committee to continue you in the office of chairman.

Boston in 1907.

Invitations were received by the association from the cities of Milwaukee, St. Louis and Boston, and the committee on the next place of meeting reported in favor of St. Louis. The minority report, however, favored Boston, and a vote taken by the delegates resulted in the selection of the latter as the meeting place for the convention next year.

New Officers.

Officers for the ensuing year were elected as follows:

PRESIDENT, E. M. Bush, Evansville, Ind.

FIRST VICE-PRESIDENT, S. R. Miles, Mason City, Iowa.

SECOND VICE-PRESIDENT, G. W. Rockwell, Horseheads, N. Y.

TREASURER, A. T. Stebbins, Rochester, Minn.

SECRETARY, M. L. Corey, Argos, Ind. (re-elected).

EXECUTIVE COMMITTEE: A. T. Stebbins, Rochester, Minn.; H. J. Hall, Lincoln, Neb.; D. F. Barber, Boston, Mass.; H. L. McNamara, Janesville, Wis.; G. R. Lott, Chicago; G. W. Wolbert, Bismarck, N. D.

In thanking the delegates for his election to the presidency, E. M. Bush said:

Six years ago I had the honor of being one of Indiana's representatives in Chicago when this organization was formed and when it was known as the Inter-State. At that time only a small body of men, representing perhaps a half dozen States, with an aggregate membership of 1000, was in attendance. We have grown into a strong national association, in which more than half the States in our Union now have membership; an organization respected by manufacturer and jobber and honored by thousands of retail Hardware merchants throughout the country. Respected and honored because of its conservative and just actions under the leadership of the able men who have guided its destiny in the past.

Before adjourning W. P. Bogardus, the retiring president, was presented with a handsome gold headed cane.

Entertainment.

A dinner was tendered the delegates by the Chicago Retail Hardware Association on Wednesday evening at the Sherman House. Several hundred guests were present and music was rendered while the menu was being served. The musical selections were interspersed at times with popular songs, the words of which were contained in a song folder provided each guest by the American Steel & Wire Company. W. H. Bennett, in his own inimitable manner, acted as toastmaster and introduced W. P. Bogardus as the first speaker. He said:

There are a good many things we have to contend with in this world and unless we have some vigor with which to meet these difficulties our efforts will not amount to much. We have got to put in our work vigor, push and earnestness, faithfulness and interest, and I stand here to-night to congratulate the Hardware men of this country on the position they are taking and for the wonderful record they have made. They are honest men through and through. So I say to you to-night for your own encouragement that you may continue in the cause, that you may base your business on an honest, square, broad foundation and that you may teach your children honesty.

Among others that responded were: G. R. Lott, W. P. Lewis, Adolph Unfug, H. G. Cormick, Wm. Gormley, F. Alexander Chandler, Sharon E. Jones, Nathan Roberts, D. A. Merriman, C. A. Peck, A. T. Stebbins, S. S. Bryan, A. H. Abbe, S. R. Miles, Thomas P. O'Brien and C. H. Williams.

On Thursday afternoon after the close of the convention the delegates went in a body to the warehouses of Hibbard, Spencer, Bartlett & Co., where they were shown the company's extensive jobbing facilities.

Convention Notes.

Several manufacturers were represented at the convention, among them the following:

THE PIKE MFG. COMPANY, Pike, N. H. Exhibit of Pike's Assortment. Represented by H. L. Davis. Souvenir, combined Paper Weight, Blotter and Sharpener.

DOVER MFG. COMPANY, Canal Dover, Ohio. Asbestos sad irons. Represented by O. A. Keyser. Souvenir, miniature Asbestos Sad Iron.

THE L. & I. J. WHITE COMPANY, Buffalo, N. Y. Represented by J. Goldthwaite. This company's exhibit of Grinders and Edge Tools as well as Chisels and Plane Irons, Hand Shaves, Cleavers, &c., did not arrive in time for installation at the Great Northern, owing to a wreck. Souvenir, watch fob.

THE AMERICAN STEEL & WIRE COMPANY, Chicago, entertained the visitors in one of the rooms adjoining the convention hall in the Great Northern Hotel. A large stock of carnations was constantly kept on hand and boutonnieres were presented the delegates every day. The company was represented by D. A. Merriman, A. L. Wellman and J. N. Holloway.

The Entertainment Committee of the Chicago Retail Hardware Association consisted of W. H. Bennett, G. R. Lott, G. A. Englehardt, J. L. Smith and W. B. Costello.

Delegates Present.

Following is a list of the delegates present:

COLORADO.
F. C. Moys, Boulder.
Adolph Unfug, Walsenburg.

CONNECTICUT.
Jas. de F. Phelps, Windsor Locks.
A. H. Abbe, New Britain.

ILLINOIS.
Frank B. McKenney, Rockford.
H. G. Cormick, Centralia.
Chas. H. Williams, Streator.
Fred. Giessing, E. St. Louis.
G. R. Lott, Chicago.
H. E. Gnadt, Chicago.
F. F. Porter, Chicago.
L. D. Nish, Elgin.

INDIANA.
C. A. Ellis, Carlisle.
C. B. Frame, North Manchester.
S. R. Jones, Richmond.
L. Kinderman, Boonville.
Fred. Bartholomew, Michigan City.
E. M. Bush, Evansville.
W. P. Lewis, New Albany.

IOWA.
C. E. Haas, LeMars.
J. F. Doty, West Liberty.
L. C. Abbott, Marshalltown.
W. H. Millard, Cherokee.
S. R. Miles, Mason City.
A. R. Sale, Mason City.
John Vance.

KENTUCKY.
J. S. Ogden, Ashland.
J. R. Sower, Frankfort.

MICHIGAN.
J. H. Whitney, Merrill.
A. J. Scott, Marine City.

MINNESOTA.
W. H. Tomlinson, Le Sueur.
J. F. McGuire, St. Paul.

Julius Schmidt, Wabasha.
C. H. Casey, Jordan.
W. H. Clark, Lakefield.
Elmer Houghtaling, Fairmont.
M. S. Mathews, Minneapolis.
F. W. Lucas, Litchfield.
A. T. Stebbins, Rochester.

MISSOURI.

E. H. Myers, St. Louis.

NEBRASKA.

Nathan Roberts, Omaha.
H. J. Hall, Lincoln.
L. F. Holloway, Fremont.
Frank H. Smith, Lincoln.

NEW ENGLAND.

F. Alexander Chandler, Boston.
D. Fletcher Barber, Boston.

NEW YORK.

B. L. Andrews, Salamanca.
G. W. Rockwell, Horseheads.
F. E. Pelton, Herkimer.
C. P. Sherwood, White Plains.

NORTH DAKOTA.

H. F. Emery, Fargo.
G. W. Wolbert, Bismarck.
C. N. Barnes, Grand Forks.

OHIO.

Frank W. Ingalls, Bryan.
O. S. Johnson, Barberton.
Frank A. Bare, Mansfield.

OKLAHOMA AND INDIAN TERRITORIES.

A. L. Severance, Oklahoma City.

PENNSYLVANIA.

S. S. Bryan, Titusville.
Geo. V. Thompson, Mt. Jewett.
J. M. Selheimer, Lewiston.
J. E. Digby, McKees Rocks.
C. H. Miller, Huntingdon.

SOUTH DAKOTA.

E. D. Hawkins, Vermillion.
Noah Keller, Woonsocket.

WISCONSIN.

E. H. Ramm, New London.
H. F. Krueger, Neenah.
J. Kornely, Milwaukee.
J. Murphy, Racine.
A. H. Kleberg, Nekoosa.
C. A. Peck, Berlin.

STATE HARDWARE SYNDICATE VS. CATALOGUE COMPETITION.

AT the various retail Hardware conventions recently held, full reports of which appeared in our columns, a number of schemes and methods for combating and meeting the competition of the retail catalogue houses were submitted by members and more or less fully considered and discussed. It is evident that more attention than ever is being given to ways and means of minimizing the effect of this form of competition, either by increased energy and enterprise in the conduct of the store, by concert of action on the part of merchants in a given town or section designed to keep farmers from trading with the mail order concerns, or in other ways.

An Ohio Hardware man calls our attention to a plan for helping the local merchant which he is desirous of submitting for consideration and criticism. It contemplates the formation of a State syndicate for the purchase of goods. Our correspondent describes his plan as follows:

Suppose that the retail dealers of the State incorporate a company under the name of "The Ohio Hardware Syndicate," making the capital stock $100,000, divided into 1000 shares of $100 each, and allowing any legitimate Hardware dealer to subscribe for one, two, three, four but not more than five shares. Stockholders to elect ten directors; these directors elect the officers, agreeable to laws of the State, and also select a manager for the syndicate, this being a very important part of the plan.

Then secure a location at a good shipping point, with storage room sufficient to hold stocks of light Hardware, such as Cutlery, small tools and other goods, for prompt shipment. On shipments from this stock make a specific charge of, say, 25 cents on each shipment, and also a sliding scale commission charge, namely 5 per cent. on all shipments of $10 and under, 3 per cent. over $10 and 2 per cent. on shipments over $50.

All heavy Hardware to be shipped direct from factory. Duplicate bills to be sent to syndicate office, one to be forwarded to dealer receiving the goods and one held at office for reference. Syndicate to hold cash discount, which will average about 2 per cent., same to be used, together with charge on local shipments, to cover running expense. Any Hardware dealer not a stockholder to have same privilege of buying and shipments made to him just as promptly on payment of a small commission in addition to the above charges.

We think the above plan might secure the advantage of quantity buying, which is one of the points to be overcome, and at the same time distributing goods without a great deal of extra expense.

In further explanation of the above: Five hundred retail dealers subscribing for an average of two shares each would provide the $100,000 capital which would be required to carry a stock of goods for local shipment. These 500 dealers, on a small estimate, should buy in this manner a yearly average of $10,000 each, making in the aggregate $5,000,000 worth of Hardware, which would earn for a syndicate at 2 per cent. $100,000, which ought to be sufficient to pay all running expenses and pay a moderate dividend on the capital stock, not taking into consideration the charge on local shipments.

This plan, whether or not it is deemed practicable, may be suggestive to our readers who are considering the problem as to how retail merchants can purchase at figures at least approximating those obtained by the catalogue houses, and we invite a discussion of the subject.

PRICE-LISTS, CIRCULARS, &c.

Manufacturers in Hardware and related lines are requested to send us copies of catalogues, price-lists, &c., for our catalogue department in New York; and at the same time to call our attention to any new goods or additions to their lines, of which appropriate mention will be made, besides the brief reference to the catalogue or price-list in this column.

E. J. MARTIN'S SONS, Rockville, Conn.: Handsome booklet referring to Kingfisher Fishing Lines and containing sample of "Saltene" Enameled Silk Line.

AUTMO CABINET COMPANY, Rochester, N. Y.: Catalogue of Autmo Tool Cabinets, containing all manner of Tools for general repair work and described as "a machine shop on wheels."

MARSHALLTOWN TROWEL WORKS, Marshalltown, Iowa: Catalogue of Plasterers' Tools.

EAGLE COOPERAGE WORKS, Circleville, Ohio: Catalogue E of Eagle Mop Wringers and Buckets combined, and Ohio Mop Heads and Detachable Handles.

DRAPER & MAYNARD COMPANY, Plymouth, N. H.: Catalogue of D. & M. Sporting and Athletic Goods, Clothing, Supplies, &c.

PORTER SCREEN MFG. COMPANY, Burlington, Vt.: Illustrated catalogue of Porter made-to-order Screens, Screen Guards, Screen Hardware, &c.

A. BUCH'S SONS COMPANY, Elizabethtown, Pa.: Catalogue and booklet referring to Land, Lawn, Road and Golf Rollers, Corn Shellers, Corn Markers, Straw and Feed Cutters, Troughs, Wheelbarrows, Cellar Grates and Small Implements. Booklet referring to Eagle Lawn Swings.

W. L. BARRETT, Bristol, Conn.: Illustrated catalogue referring to Barrett's Standard Glass Cutters.

DESHLER MAIL BOX COMPANY, Deshler, Ohio: Illustrated descriptive catalogue of Success Cream Separators and Refrigerating Cans, Oil Tanks, R. F. D. Mail Boxes, Mann Chimney Thimbles, Stove Pipe Reducing Thimbles and Minnow Pails.

REEVES MFG. COMPANY, Canal Dover, Ohio: Catalogue of Eaves Trough, Conductor Pipe, Hangers, Dover & Smith's Patent Nested Stove Pipe, Dover one piece and four pieced Stove Pipe Elbows, Black and Galvanized Sheets, &c.

KIETLAND BROS. & Co., 90 Chambers street, New York: Illustrated catalogue of Guns, Rifles and Revolvers, Sporting and Athletic Goods and Supplies.

LEADER EVAPORATOR COMPANY, Burlington, Vt.: Circular referring to Leader Evaporators, Monitor Gathering Tanks and Maple Sugar Makers' Utensils.

MCCRAY REFRIGERATOR COMPANY, Kendallville, Ind.: Catalogue No. 81, an elaborate edition, referring to Refrigerators for the residence.

PENN METAL CEILING & ROOFING COMPANY, Philadelphia, Pa.: Catalogue of Steel Ceilings, giving directions for ordering, &c.; also circular referring to Expanded Metal for reinforced concrete construction.

WORCESTER LAWN MOWER COMPANY, Worcester, Mass., J. C. McCarty & Co., selling agents, 10 Warren street, New York: Handsome catalogue of Lawn Mowers, with illustrations in colors.

VOM CLEFF & Co., 105 Duane street, New York: Cloth bound catalogue and price-list of imported Hardware and Cutlery, including Lion Pocket Cutlery and Diamondine Razors.

NEW CASTLE PAINT & VARNISH COMPANY, New Castle, Pa.: Booklet referring to Crystal Pullman Finish and Crystal Oil Varnishes.

STREATOR METAL STAMPING COMPANY, Streator, Ill.: Catalogue of Sterling Steel Carpet Sweepers and Streator Steel Go-Carts.

DIAMOND CHAIN & MFG. COMPANY, Indianapolis, Ind.: "Standard Dimensions of Power Chains and Sprockets," a catalogue and manual of chain transmission; Catalogue B, referring to Chains for automobiles, bicycles and general power transmission; Catalogue C, referring to Cable and Gear Chains.

FACTORY COST AND BUSINESS METHODS.

A FACTORY COST SYSTEM.

BY R. W. M'DOWELL.

THE idea appears to prevail among a great many manufacturers, writers and others interested in the subject of factory accounting that a cost system is a most intricate affair, necessitating the daily or even hourly use of a multitude of reports, requisitions, records and cards, the operation of which requires a legion of clerks and bookkeepers, besides taking up a large proportion of the time of the foremen and the superintendent. Why such an idea should prevail is hard to say, for it is far from the actual facts. A cost system need be

Neither Complicated Nor Expensive

to operate. Material, productive labor and general expense are the items entering into the cost of any manufactured article, and it is only necessary to provide for the strict accounting of these items in the simplest manner possible consistent with accuracy. We will admit that in many cases the idea of detailed costs is carried to extremes, and elaborate cost systems are installed which not only require a large number of forms of various descriptions, operated at a heavy clerical expense, but also burden the foremen with an incredible number of reports, requisitions, &c.; but at the same time it is entirely practical to operate a system which is both simple and inexpensive, and which puts but little bookkeeping on the foreman, the clerical work being done in the office where it should be done. The extremely elaborate and complicated systems seldom provide any more information than the simpler plans—they merely scatter it about over a larger number of cards and loose sheets.

A system for keeping track of the factory costs of a machine tool company is here described, and it will be seen by an inspection of the forms that it should not be expensive to install or maintain, and that it provides the information which is necessary to aid in attaining what should be

The Aim of All Cost Systems

—cost reduction. The cost of the clerical labor necessary to operate it will naturally depend on the size of the plant and the amount of business done, but this item will not be large, and in an ordinary sized plant will not require any addition to the regular office force, with the exception of the factory clerk, a position that should be filled in any up to date plant, as the time saved the foremen and manager will more than offset the additional expense. When goods are required for a customer's order, for stock or for new equipment for the plant,

A Shop Order

is issued. This is manifolded, so that there will be one copy for the office, one for the factory clerk and one for the foreman of each department through which the job will pass. The order to the factory clerk is signed by the manager, as shown in Fig. 1, while the orders to the various departments are filled in with the names of the foremen and signed by the clerk himself as in Fig. 2. This set of forms can very easily be filled in on a book type writer, though a hard lead pencil can be used in case the office does not have one of these machines. The illustrations refer to an order for 100 Gear Wheels, No. H31, which are required for stock. It is assumed that the plant in question does not operate a foundry, but purchases its castings from outside concerns.

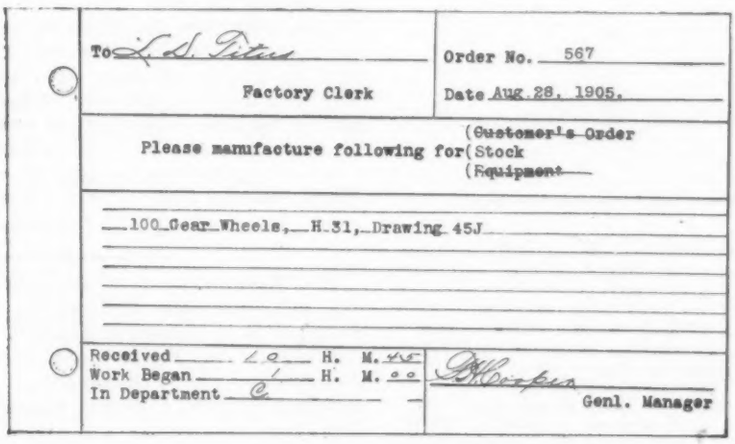

To L. S. Pitts — Factory Clerk
Order No. 567
Date Aug. 28, 1905.
Please manufacture following for (Customer's Order / Stock / Equipment)
100 Gear Wheels, H 31, Drawing 45J
Received 10 H. M. 45
Work Began 1 H. M. 00
In Department C
D. F. Crapo
Genl. Manager

Fig. 1.—Stock Order Signed by Manager.

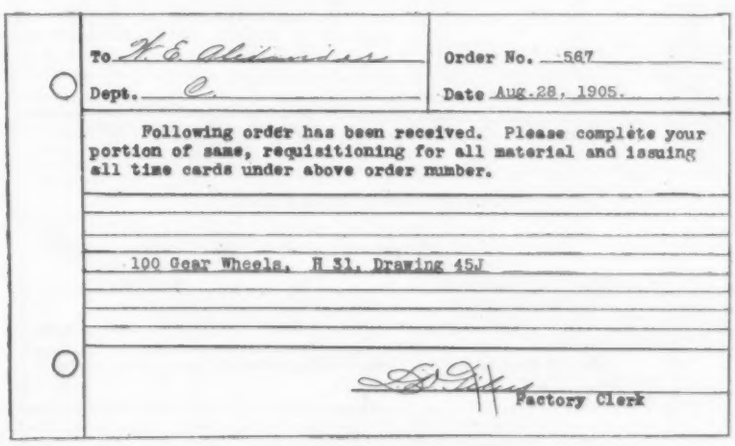

To H. E. Abbott
Dept. C
Order No. 567
Date Aug. 28, 1905.
Following order has been received. Please complete your portion of same, requisitioning for all material and issuing all time cards under above order number.
100 Gear Wheels, H 31, Drawing 45J
Factory Clerk

Fig. 2.—Department Order Signed by Factory Clerk.

If a Foundry Is Operated

in connection with the plant, it should be treated as an outside and separate department altogether, as conditions

WORK TICKET

Date Aug 28 Job No. 567

Articles

No. Pcs.	Description
100	Gear Wheels R31

Dept. C

This ticket must accompany all orders in the process of manufacture from one department to the next until work is completed on such orders. Foremen must receipt for work in proper columns on reverse side, and must also report work sent forward. If for any reason less work is sent forward than received, an explanation of the cause must be made on order copy when same is turned in to the office.

Fig. 3.—Face of Work Ticket.

expense, and would be credited with all good castings that it produced. A separate cost system would have to be maintained for it, which would be so different from the present one that it would not be adapted to description here. In either case, whether the plant has a foundry or not, the operation of this system is exactly the same, and will give the same results.

When the factory clerk receives the set of forms above referred to he notes the time on his copy and fills in the names of the foremen on the various department copies, signing each copy.

A Work Ticket,

shown in Figs. 3 and 4, is next made out, this ticket accompanying the order from department to department. He then distributes the orders to the proper departments, giving the work ticket to the foreman of the first department along with his order copy, and then files his own copy until the order has been completed. When the foreman of the first department is ready to begin work on the order he makes out a requisition like Fig. 5 for the material required—in the present case 100 Rough Gear Wheel Castings and 100 Set Screws.

(To be continued.)

The Western Hardware & Implement Company is the title of a new firm at Lewiston, Idaho. The firm is headed by R. L. Spiker, president of the Kamiah Trading Company, at Nez Perce, which concern already has several stores in the Lewiston territory. The Western Hardware & Implement Company has purchased the stock of Louis Delsol at Lewiston and will add to all lines.

The Luebkemann Hardware Company has been incorporated at Eau Claire, Wis., to succeed the business here-

Job No. 567

Received				Sent Forward		
Date	No. Pcs.	Signed	Date	No. Pcs.	To Dept.	
			Aug 28	100	E	
Aug 28	100	Eckmyer	" 29	100	G	
" 29	100	L Moran	" 30	100	K	
" 30	100	Wm Schaff	" 31	100	Store Room	

Return this ticket to office with order when work is completed.

Fig. 4.—Reverse of Work Ticket.

To L. J. Hazen Storekeeper

No. 1108

Date Aug 28 1905

Please supply as follows. This material to apply on Order No. 567

100 Gear Wheel Castings R. 31
100 Set Screws, Sq Head 1/4" x 4"

W E Ahlenius Foreman Dept. C

Fig. 5.—Requisition Order for Material.

in the foundry differ so widely from those in other parts of the plant. It would then be charged with all material and labor together with its proportion of the general

tofore conducted by Wm. W. Luebkemann. The company is capitalized at $20,000, the incorporators being William W. Luebkemann, Charles Karst and Edward H. Burnham.

PACKAGE CHARGES ON GLASSWARE AND CROCKERY.

ANNOUNCEMENT is made on the front cover page of the spring catalogue of Butler Brothers, Chicago, that all package charges are abolished on Glassware and Crockery. In exposition of this move the firm states: "The package charge on Glassware has always been a matter of contention among makers, jobbers and retailers. We have never been satisfied with it, but have done as our neighbors did. We have now decided to cut the Gordian knot by abolishing the charges wholly, thus making our terms in the future, 'No package charge on any goods.'" In taking the initiative in this direction this firm has established a precedent which will doubtless shortly be followed by other jobbers and manufacturers. The package charge has heretofore militated much against the development of trade in China and Glassware, as many stores that would otherwise add a stock of this Ware are guided by rules which prevent their paying package charges.

Enameled Ware.

A new line of enameled ware is being put on the market by Leffler, Thiele & Co., 47 Murray street, New York. It is made in Germany under a patent of recent issue and is styled Seamless, Non-leak, Pyrolite enameled ware. The feature to which attention is especially called is that all spouts and lips are seamless and are put on without rivets, being welded in place, thus not only affording great durability and preventing leaks, but also presenting a fine appearance. All utensils are said to be extra large and of most approved design. It is also stated that if a utensil is heated red hot cold water may be sprinkled or dashed into it without damaging it in any way or even cracking the surface of the enamel.

Index Funnel.

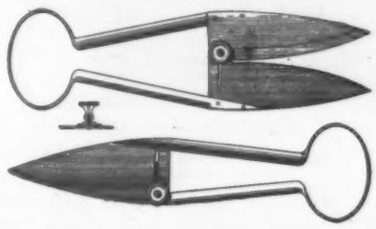
W. T. Taliaferro, 258 Broadway, New York, is manufacturing the Index funnel, patented, here illustrated. The object of this funnel is to enable any one to fill a tank or other liquid holding receptacle and know with certainty when it is full without having it overflow. The funnel is especially serviceable for use in and about automobiles, motor boats, launches, etc., where gasoline and naphtha are used. The No. 1 size is made of copper, having an oval top 6¾ x 5⅛ inches and a spout 3 inches long and ⅞ inch in diameter. In the spout is a

Index Funnel, Sectional View.

float which rises as the liquid poured through it nears the top of the can, tank or other reservoir. There is a fine wire sieve in the funnel to stop any foreign matter or dirt and a splash guard near the top to catch any rebound of the liquid, which also serves to hold a piece of chamois or cloth where extra good results in filtration are desired. The inner parts of the funnel are tinned. There is a No. 2 size of galvanized steel, 8½ x 7 inches at top, with ⅞ x 7 inch spout, and a No. 3, 10½ x 8¾ inches, with same size spout.

Grass and Sheep Shears.

The Empire Specialty Tool Company, Syracuse, N. Y., and 299 Broadway, New York, has recently put on the market the grass and sheep shears here shown. A marked characteristic of this construction is that the blades cannot pull apart or cut over, being held together by means of a spring under the thumb nut which can be adjusted instantly so as to give the proper tension. Another feature of it is that the edges by friction tend to self-sharpen themselves. Under the head of the thumb



Grass and Sheep Shears, Open and Closed.

nut are two washers, and when the shears are not in use they can be closed and kept together by a turn of the nut, the stem of which is fastened to under blade of shear, working through a slot in upper blade. The handles and spring are formed of one piece from special sheet steel and riveted securely to the blades. Between the two illustrations of shears is an enlarged view, in another position, of the thumb nut, as attached to the lower blade. The shears are made in 6 and 7 inch sizes, in full nickel, full polished and half polished, the 7-inch size being 13½ inches long over all.

Hubbard's Tack Pullers.

The oil tempered steel tack puller shown in Fig. 1 stands at an angle suitable to catch a tack and remove it before the knuckles touch the floor. The handle is

Fig. 1.—Hubbard's Tool Steel Tack Puller.

referred to as being high grade. The puller illustrated in Fig. 2 is especially designed to draw double pointed tacks, but may also be used for scraping dirt out of cracks and corners, pulling poultry netting staples, &c. In use for pulling double pointed tacks in matting, it is explained that the puller slides along the floor between the two edges of the matting and the point slips under

Fig. 2.—Hubbard's Double Pointed Tack Puller.

the tack; also that a slight pressure of the hand lifts the tack out instantly without injury to tack or hand. The tool is made of tool steel, oil tempered, and has a first-class handle. Both the pullers are designed to retail for 10 cents each, and are offered by the Ashtabula Mfg. Company, Ashtabula, Ohio.

Ware Brothers have been succeeded by Ware Brothers Company at Spokane, Wash. The new firm has recently moved to Howard street and has added a complete line of Hardware to the stock of Sporting Goods formerly carried. Fred H. Dayton, formerly traveling salesman for the Norvell-Shapleigh Hardware Company in Washington territory, is in charge of the Hardware and is associated with the new firm.

Crispy Bread Toaster.

The toaster shown in the accompanying cut is made by J. L. Clark Mfg. Company, Rockford, Ill. The base is made of steel, lacquered to prevent rusting. Arranged upon the base are a series of parallel wires, the ends of which are secured in position by the overturned edges of the base. A wire handle is riveted at one end. The

Crispy Bread Toaster.

goods may be nested for shipment. It is claimed for this device that it enables one to toast bread, rolls, &c., a delicate brown without drying them up or scorching them.

Stevens Maynard Junior Rifle.

J. Stevens Arms & Tool Company, Chicopee Falls, Mass., has recently made some important changes in its well-known Maynard Junior rifle, No. 15. This is a 0.22 caliber arm, chambered for short, long and long rifle

Fig. 1.—Stevens Maynard Junior Rifle.

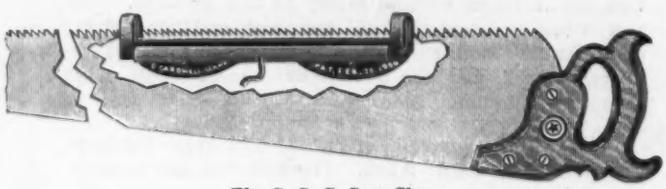
cartridges. It has an 18-inch half octagon barrel. The stock and forearm are made of walnut and were formerly flat, but the regular oval stock shown in Fig. 1 will be supplied in the future without additional charge. The mechanism and lever action are shown in Fig. 2. A shotgun, No. 15½, is also offered, which is the same as the

Fig. 2.—Action of the Stevens Maynard Junior Rifle.

rifle except that it has a smooth bore barrel for a 0.22 shot cartridge.

The C. C. C. Saw Clamp.

C. W. Cardwell, 51 Johnson avenue, Jamaica, N. Y., is offering the saw clamp shown herewith. The frame is

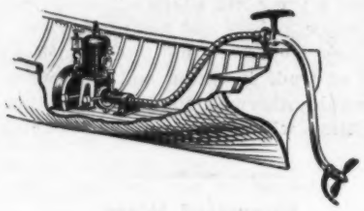


The C. C. C. Saw Clamp.

made of the best gray iron, japanned, while the clamping bar of rolled steel is completely covered with rubber. The rubber covering is referred to as holding the saw rigid, as taking up all vibration, thus saving in the cost of files and rendering the operation of filing practically noiseless. The clamp weighs a trifle over 1 pound and can be carried in the pocket conveniently. Among the points of excellence mentioned by the manufacturer are simplicity, lightness, durability, efficiency and the small space occupied.

The Coates Flexible Portable Boat Arm.

The Coates Clipper Mfg. Company, Worcester, Mass., is putting on the market what it terms a flexible boat arm by means of which any ordinary small boat may be fitted with gas engine and propeller without cutting the



The Coates Flexible Portable Boat Arm.

boat for a propeller shaft, the result being an easily portable power equipment, weighing, packed for shipment, 100 pounds. The motor is bolted to a platform in the bottom of the boat, and from its shaft is a flexible shaft, contained in a flexible metallic covering as far as the stern piece of the boat, and thence to the screw in a brass tube. This tube swings in bearings on a trunnion held on the stern, the purpose of the trunnion being to enable the screw to lift when its guard strikes an obstruction in the water, as a sand bar, rock or submerged log. Fastened to the brass tube at the stern piece is a tiller. The pull of the tiller rope swings the brass tube together with its inclosed shaft and the propeller, the latter acting as the rudder. It is well known that the quickest acting rudder is one with power at its end, as in this case, so that the boat equipped with this device is exceedingly lively in its evolutions. There is a stuffing box on the propeller end of the brass tube to prevent water entering.

Bay State Compound Leverage Belt Punch.

The Bay State belt punch shown in the illustration has as its characteristic features the compound leverage which gives a powerful action of the punching die and the

Bay State Compound Leverage Belt Punch.

wide opening which permits of receiving a belt ¾-inch thick and 2½ inches wide. It is manufactured of steel castings and tool steel cutting tubes, the latter in three sizes, 3-16, ¼ and 5-16 inch. The tool is the product of the Tudor Mfg. Company, 147 Milk street, Boston.

Colt Automatic Pistol with Combination Holster and Stock.

The Colt's Patent Firearms Mfg. Company, Hartford, Conn., has just put on the market the automatic Colt pistol .45 caliber with combination holster and stock. The pistol proper is similar to the one previously on the

Fig. 1.—Colt Automatic Pistol, Caliber .45, with Combination Holster and Stock.

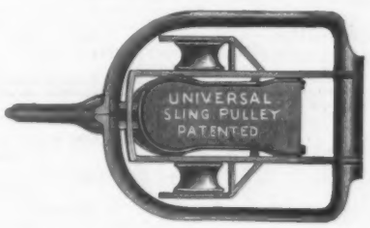
market in calibers .32, .38 and .45, the new feature in the latest model being the quick and convenient method of attaching the pistol to the holster in which it is carried in belt at the waist, thus instantly converting the firearm into a shoulder piece. The ammunition used is

Fig. 2.—Pistol Attached to Holster and Stock.

said to be of sufficient stopping power to bring down large game. It also adds to the efficiency of a side arm without the inconvenience of carrying extra bulk or weight. The recoil being absorbed in producing the automatic operation the usual disturbing effect or unpleasant jar is largely eliminated in this arm. The combination stock and holster are made of extra quality black leather, well seasoned, lined with buckskin and hand-stitched over a light but strong and rigid steel frame. The device for attaching the pistol to the stock, as seen in Fig. 2, is so arranged that it is perfectly secure when in place. Loaded with smokeless powder only, the cartridge has a full metal cased bullet, giving a velocity of 900 feet per second and a penetration in ⅞-inch pine boards of seven boards at 225 feet and six boards at 325 feet. The specifications of this pistol are: Weight, 32½ ounces; length over all, 8 inches; length of barrel, 5 inches; capacity of magazine, 7 shots, the finish being full blued with checked walnut stocks. Stock and holster only weigh 21 ounces, and are 11 inches long over all. The pistol with stock attached weighs 53½ ounces and is 19 inches long over all.

Myers Universal Reversible Sling Pulley.

The sling pulley shown herewith is made by F. E. Myers & Bro., Ashland, Ohio. It is designed to provide a device which can be used with any make of hay carrier that a farmer may happen to have installed in his barn. A special feature is the arrangement making it possible for one traveling pulley to pass through another and form a loop, in this way accomplishing everything that can



Myers Universal Reversible Sling Pulley.

be done with a hay sling. The manufacturers state that the sling pulley cannot be misplaced on the rope, as it can be used either side up in connection with any shape or style of fork pulley, requiring no registering device of any kind. The machine is light and convenient to handle.

PAINTS, OILS AND COLORS

Animal, Fish and Vegetable Oils—

	₱ gal.
Linseed, City, raw	42 @43
Linseed, City, Boiled	43 @44
Linseed, State and West'n, raw	40 @41
Linseed, raw Calcutta seed	@65
Lard, Extra Prime, Winter	69 @70
Lard, Extra No. 1	48 @49
Lard, No. 1	38 @40
Cotton-seed, Crude, f.o.b. mills	26½@27
Cotton-seed, Summer Yellow, Prime	33¼@34½
Cotton-seed, Summer Yellow, off grades	@..
Sperm, Crude	61 @..
Sperm, Natural Spring	@..
Sperm, Bleached Spring	@..
Sperm, Natural Winter	60 @63
Sperm, Bleached Winter	63 @64
Tallow, Prime	61 @63
Whale, Crude	31 @32
Whale, Natural Winter	38 @41
Whale, Bleached Winter	40 @42
Extra Bleached Winter	44 @46
Menhaden, Brown, Strained	26 @29
Menhaden, Light, Strained	27 @30
Menhaden, Bleached, Winter	32 @33
Menhaden, Ex-Bld., Winter	34 @35
Menhaden, Southern	@..
Cocoanut, Ceylon ₱ lb	6¼@ 6¾
Cocoanut, Cochin ₱ lb	7¾@ 8
Cod, Domestic, Prime	32 @35
Cod, Newfoundland	35 @38
Red, Elaine	35 @37
Red, Saponified ₱ lb	4¾@ 4¾
Olive, Italian, bbls	58 @60
Neatsfoot, prime	48 @49
Palm, Logos ₱ lb	6¼@ 6½

Mineral Oils—

	₱ gal.
Black, 29 gravity, 25@30 cold test	10½@11½
Black, 29 gravity, 15 cold test	11¼@12½
Black. Summer	10¼@11¾
Cylinder, light filtered	18 @19
Cylinder, dark filtered	16 @17
Paraffine, 905-907 gravity	13¼@14
Paraffine, 903 gravity	12½@13
Paraffine, 883 gravity	10¼@10¾
Paraffine, Red	12½@14

In small lots ½¢ advance.

Miscellaneous—

Barytes:	
White, Foreign ₱ ton	$17.50@19.00
Amer. floated ₱ ton	17.00@19.00
Off color, No. 2 ₱ ton	13.50@15.00
Chalk, in bulk ₱ ton	3.00@ 3.25
Chalk, in bbls. ₱ 100 lb	....@ .35
China Clay, English, ₱ ton	12.00@17.00
Cobalt, Oxide ₱ 100 lb	2.50@ 2.60
Whiting, Common, ₱ 100 lb	.45@ .42
Whiting, Gilders ₱ 100 lb	.50@ .55
Whiting, Ex. Gilders, ₱ 100 lb	.55@ .60

Putty, Commercial—₱ 100 lb

In bladders	$1.70 @1.85
In bbls. or tubs	1.20 @1.40
In 1 lb to 5 lb cans	2.65 @2.95
In 12½ to 50 lb cans	1.50 @1.90

Spirits Turpentine—₱ gal.

In Oil bbls	71½@72
In machine bbls	72 @72½

Glue—

	₱ lb
Cabinet	11 @15
Common Bone	7 @ 9
Extra White	18 @24
Foot Stock, White	11 @14
Foot Stock, Brown	8 @11
German Hide	12 @18
French	10 @40
Irish	13 @16
Low Grade	9 @12
Medium White	14 @17

Gum Shellac—

	₱ lb
Bleached Commercial	40 @42
Bone Dried	50 @52
Button	40 @45
Diamond I	53 @54
Fine Orange	46 @50
A. C. Garnet	41 @42
D. C	60 @..
Octagon B	@52
T. N	43 @44
V. S. O	54 @55

Colors in Oil—

	₱ lb
Black, Lampblack	12 @14
Blue, Chinese	36 @46
Blue, Prussian	32 @36
Blue, Ultramarine	13 @16
Brown, Vandyke	11 @14
Green, Chrome	12 @16
Green, Paris	@24
Sienna, Raw	12 @15
Sienna, Burnt	12 @15
Umber, Raw	11 @14
Umber, Burnt	11 @14

White Lead, Zinc, &c.—

	₱ lb
Lead, English white, in Oil	9½@ 9¾
Lead, American white, in Oil:	
Lots of 500 lb or over	@ 7¼
Lots less than 500 lb	@ 7¾
In Barrels	@ 6¾
Lead, White, in oil, 25 lb tin pails, add to keg price	@ ⅛
Lead, White, in oil, 12½ lb tin pails, add to keg price	@ 1
Lead, White, in oil, 1 to 5 lb ass'ted tins, add to keg price	@ 1¼

Lead, American. Terms: For lots 12 tons and over ¼¢ rebate; and 2% for cash if paid in 15 days from date of invoice; for lots of 500 lbs. and over 2% for cash if paid in 15 days from date of invoice, for lots of less than 500 lbs. net.

	₱ lb
Lead, White, Dry, in bbls	@ 6¾
Zinc, American, dry	4¾@ 5
Zinc, French:	
Paris, Red Seal, dry	9½
Paris, Green Seal, dry	10¾
Antwerp, Red Seal, dry	8¾
Antwerp, Green Seal, dry	10

Zinc, V. M. French, in Poppy Oil:
Green Seal:
Lots of 1 ton and over 12¾@13¾
Lots of less than 1 ton 13¾@15¾
Zinc, V. M. French, in Poppy Oil:
Red Seal:
Lots of 1 ton and over 11¾@12¼
Lots of less than 1 ton 11¾@12¾
Discounts.—French Zinc.—Discounts to buyers of 10 bbl. lots of one or mixed grades, 1%; 25 bbls., 2%; 50 bbls., 4%.

Dry Colors—

	₱ lb
Black, Carbon	5 @10
Black, Drop, American	4 @ 6
Black, Drop, English	5 @15
Black, Ivory	16 @20
Lamp, Com	4½@ 6
Blue, Celestial	4 @ 6
Blue, Chinese	29 @32
Blue, Prussian	27 @30
Blue, Ultramarine	4½@15
Brown, Spanish	½@ 1
Carmine, No. 40	$3.30@3.40
Green, Chrome, ordinary	3½@ 6
Green, Chrome, pure	17 @25
Lead, Red, bbls., ½ bbls. and kegs:	
Lots 500 lb or over	@ 7¼
Lots less than 500 lb	@ 7¾
Litharge, American, bbls	@ 7¼
Ocher, American ₱ ton	$8.50@16.00
Ocher, American Golden	2½@ 3½
Ocher, French	1¼@ 2½
Ocher, Foreign Golden	3 @ 4
Orange Mineral, English	10 @12
Orange Mineral, French	10¾@12¼
Orange, Mineral, German	8½@10
Orange, Mineral, American	8½@ 8¾
Red, Indian, English	4½@ 8½
Red, Indian, American	3 @ 3¾
Red, Turkey, English	4 @10
Red, Tuscan, English	7 @10
Red, Venetian, Amer. ₱ 100 lb	$0.50@1.25
Red Venetian, English. 100 lb	$1.15@1.75
Sienna, Italian, Burnt and Powdered	3 @ 9½
Sienna, Ital. Raw, Powd	3 @ 6½
Sienna, American, Raw	1½@ 2
Sienna, American, Burnt and Powdered	1¾@ 2
Talc, French ₱ ton	$15.00@30.00
Talc, American ₱ ton	15.00@25.00
Terra Alba, French ₱ 100 lb	90 @1.00
Terra Alba, English ₱ 100 lb	90 @1.00
Terra Alba, American, ₱ 100 lb, No. 1	70 @80
Terra Alba, American, ₱ 100 lb, No. 2	60 @65
Umber, T'key, Brt. & Pow	2¼@ 3½
Umber, Turkey, Raw & Pow	2¼@ 3½
Umber, Burnt, Amer	1¼@ 2
Umber, Raw, Amer	1¼@ 2
Yellow Chrome	12 @14
Vermilion, American Lead	10 @25
Vermilion, Quicksilver, bulk	@65
Vermilion, Quicksilver, bags	@66
Vermilion, English, Import	75 @80
Vermilion, Chinese	$0.90@1.00

Current Hardware Prices.

General Goods.—In the following quotations General Goods—that is, those which are made by more than one manufacturer—are printed in *Italics*, and the prices named, unless otherwise stated, represent those current in the market as obtainable by the fair retail Hardware trade, whether from manufacturers or jobbers. Very small orders and broken packages often command higher prices, while lower prices are frequently given to larger buyers.

Special Goods.—Quotations printed in the ordinary type (Roman) relate to goods of particular manufacturers, who are responsible for their correctness. They usually represent the prices to the small trade, lower prices being obtainable by the fair retail trade, from manufacturers or jobbers.

Range of Prices.—A range of prices is indicated by means of the symbol @. Thus 33⅓ @ 33⅓ & 10% signifies that the price of the goods in question ranges from 33⅓ per cent. discount to 33⅓ and 10 per cent. discount.

Names of Manufacturers.—For the names and addresses of manufacturers see the advertising columns and also THE IRON AGE DIRECTORY, issued May, 1905, which gives a classified list of the products of our advertisers and thus serves as a DIRECTORY of the Iron, Hardware and Machinery trades.

Standard Lists.—A new edition of "Standard Hardware Lists" has been issued and contains the list prices of many leading goods.

Additions and Corrections.—The trade are requested to suggest any improvements with a view to rendering these quotations as correct and as useful as possible to Retail Hardware Merchants.

Adjusters, Blind—

Domestic, ℔ doz. $3.00.....33⅓%
North's 10%
Zimmerman's—See Fasteners, Blind.

Window Stop—

Ives' Patent.....35%
Taplin's Perfection.....35%

Ammunition— See *Caps, Cartridges, Shells, &c.*

Anvils—American—

Eagle Anvils.....℔ lb 6¾@7 ¢
Hay-Budden, Wrought.....9@9¼ ¢
Horseshoe brand, Wrought.....8@9¼ ¢
Trenton .....℔ lb 9@9¼ ¢

Imported—

Peter Wright & Sons.....℔ lb 10¼ ¢

Anvil, Vise and Drill—

Millers Falls Co., $18.00.....15&10%

Apple Parers— See *Parers, Apple, &c.*

Aprons, Blacksmiths'—

Livingston Nail Co.....33⅓%

Augers and Bits—

Com. Double Spur.....75@75&5%
Jennings' Patn., reg. finish.....50&10@60%
Black Lip or Blued.....60&10%
Boring Mach. Augers.....70&10%
Car Bits, 12-in. twist.....50&10%
Fo,d's Auger and Car Bits.....40&5%
Fo.stner Pat. Auger Bits.....25%
C. E. Jennings & Co.:
No. 10 ext. lip, R. Jennings' list..25%
No. 30, R. Jennings' list.....40&7½%
Russell Jennings'.....25&10&2½%
L'Hommedieu Car Bits.....15%
Mayhew's Countersink Bits.....45%
Millers Falls.....50&2.5&7½%
Ohio Tool Co.'s Bailey Auger and Car Bits.....40&10%
Pugh's Black.....20%
Pugh's Jennings' Pattern.....35%
Snell's Auger Bits.....60%
Snell's Bell Hangers' Bits.....60%
Snell's Car Bits, 12-in. twist....60&10%
Wright's Jennings' Bits.....50%

Bit Stock Drills—

See *Drills, Twist.*

Expansive Bits—

Clark's small, $18; large, $26....50&10%
Clark's Pattern, No. 1, ℔ doz. $26; No. 2, $18.....65%
Ford's, Clark's Pattern.....60&5%
C. E. Jennings & Co., Steer's Pat..25%
Swan's 60%

Gimlet Bits—

Per gro.
Common Dble. Cut....$3.00@3.25
German Pattern, Nos. 1 to 10, $4.00; 11 to 13, $5.75

Hollow Augers—

Bonney Pat., per doz..$5.50@6.00
Ames .....25&10%
Universal 20%
Wood's Universal.....25%

Ship Augers and Bits—

Ship Augers.....45&5@—%
Ford's .....33⅓@5%
C. E. Jennings & Co.:
L'Hommedieu's 15%
Watrous' .....35&5%
Ohio Tool Co.'s.....40%
Snell's 40%

Awl Hafts—See *Handles, Mechanics' Tool.*

Awls—

Brad Awls:
Handled .....gro. $2.75@3.00
Unhdld, Shldered..gro.63@66 ¢
Unhandled, Patent..gro.68@70 ¢
Peg Awls:
Unhandled, Patent..gro. 31@34 ¢
Unhdld, Shldered..gro. 65@70 ¢
Scratch Awls:
Handled, Com...gro. $3.50@4.00
Handled, Socket..gro.$11.50@12.00
Hurwood 40%

Awl and Tool Sets—See *Sets, Awl and Tool.*

Axes—

Single Bit, base weights:
First Quality.....$4.75@5.00
Second Quality.....$4.25@4.50
Double Bit, base weights:
First Quality.....$7.00@7.50
Second Quality.....$6.50@6.75

Axle Grease—

See *Grease, Axle*

Axles— Iron or Steel

Concord, Loose Collar...4¼@4¾ ¢
Concord, Solid Collar...4¾@5¼ ¢
No. 1 Common, Loose...3¼@3¾ ¢
No. 1½ Com., New Style3¾@4¼ ¢
No. 2 Solid Collar.....4¼@4¾ ¢
Half Patent:
Nos. 7, 8, 11 and 12....75@75&5%
Nos. 13 to 14.....70&10@75&5%
Nos. 15 to 18...75&10@75&10&5%
Nos. 19 to 22...75&10@75&10&5%

Boxes, Axle—

Common and Concord, not turned lb..4½@5¢
Common and Concord, turned. lb., 5½@6¢
Half Patent.....lb. 8½@9¢

Bait— Fishing—

Hendryx:
A Bait.....20%
B Bait.....25%
Competitor Bait.....20&5%

Balances— Sash—

Caldwell new list.....50%
Pullman .....50&10@60%

Spring—

Spring Balances.....50&10@60%
Chatillon's:
Light Spg. Balances.....40&10%
Straight Balances.....40%
Circular Balances.....50%
Large Dial.....30%

Barb Wire—See *Wire, Barb.*

Bars— Crow—

Steel Crowbars, 10 to 40 lb.... per lb., 3@3¼ ¢

Towel -

No. 10 Ideal, Nickel Plate..℔ gro. $8.50

Beams, Scale—

Scale Beams.....40&10@50%
Chattillon's No. 1.....30%
Chattillon's No. 2.....40%

Beaters, Carpet—

Holt-Lyon Co.:
No. 12 Wire Coppered ℔ doz. $0.85; Tinned $1.00
No. 11 Wire Coppered ℔ doz. $1.10; Tinned $1.20
No. 10 Wire Galvanized..℔ doz. $1.75
Western W. G. Co.:
No. 1 Electric.....℔ gro. $7.80
No. 2 Buffalo.....℔ gro. $9.00
No. 3 Perfection Dust.....℔ gro. $8.00

Egg—

Holt-Lyon Co.:
Holt, No. A, Japanned....℔ doz. $1.20
Holt, No. 1, Tinned.....℔ doz. $1.50
Holt, No. B, Japanned....℔ doz. $2.00
Holt, No. 2, Tinned.....℔ doz. $2.25
Lyon, No. 2, Japanned....℔ doz. $1.25
Lyon, No. 3, Japanned....℔ doz. $1.50
Taplin Mfg. Co.: ℔ gro.
No. 60 Improved Dover.....$6.00
No. 75 Improved Dover.....$6.50
No. 100 Improved Dover.....$7.00
No. 102 Improved Dover, Tin'd..$8.50
No. 150 Improved Dover, Hotel..$15.00
No. 152 Imp'd Dover, Hotel, T'd.$17.00
No. 200 Imp'd Dover Tumbler....$8.50
No. 202 Imp'd Dover Tumbler, T'd.$9.50
No. 300 Imp'd Dover Mammoth, ℔ doz. $25.00
Western, W. G. Co., Buffalo.....$7.00
Wonder (R. M. Co.)..℔ gro, net, $6.00

Bellows—

Blacksmith, Standard List.. 60&10@70&10%

Hand—

Inch..	*6*	*7*	*8*	*9*	*10*
Doz...	*$4.75*	*5.70*	*6.65*	*7.60*	*8.85*

Molders—

Inch..	*9*	*10*	*11*	*12*	*14*
Doz...	*$8.00*	*9.00*	*10.50*	*12.50*	*14.50*

Net Prices.

Bells— Cow—

Ordinary goods...75&5@75&10&5%
High grade.....70&10@70&10&5%
Jersey .....75&10%
Texas Star.....50%

Door—

Abbe's Gong.....45%
Burton Gong.....50%
Home, R. & E. Mfg. Co.'s.....55&10%
Lever and Pull, Sargent's....60&10&10%
Trip Gong.....50&10@50&10&5%
Yankee Gong.....55%

Hand—

Hand Bells, Polished, Brass.60&10%
White Metal.....60%
Nickel Plated.....50&10&60%
Swiss .....60@60&7½%
Cone's Globe Hand Bells.....33⅓@35%
Silver Chime.....33⅓@35%

Miscellaneous—

Farm Bells.....lb. 2¼ ¢
Steel Alloy Church and School 50&10@60%
American Tube & Stamping Co. Gongs 75%
Table Call Bells.....50@50&10%

Belting— Leather—

Extra Heavy, Short Lap..60&5%
Regular Short Lap....60&10&5%
Standard 70%
Light Standard.....70&5%
Cut Leather Lacing.....50%
Leather Lacing Sides, per sq. ft. 25¢

Rubber—

Agricultural (Low Grade).... 75@75&5%
Common Standard....70@70&10%
Standard .....60&5@60&10%
Extra .....60@60&5%
High Grade.....50&5@50&10%

Bench Stops—

See *Stops, Bench*

Benders and Upsetters, Tire—

Detroit Perfected Tire Bender.....40%
Detroit Stoddard's Lightning Tire Upsetters, No. 1, $4.25; No. 2, $7.25; No. 3, $10.50; No. 4, $16.25; No. 5, $20.50.
Green River Tire Benders and Upsetters 20%

Bicycle Goods—

John S. Leng's Son's 1902 list:
Chain 50%
Parts 50%
Spokes 50%
Tubes 60%

Bits—

Auger, Gimlet, Bit Stock Drills, &c.—See *Augers and Bits.*

Blocks— Tackle—

Common Wooden.....70&10@75%
Harts St. Tackle Blocks.....50@50&5%
B. & L. B, Co.:
Boston Wood Snatch, 50%; Eclipse Steel, 75%; Hollow Steel, 50&10%; Star Wire Rope, 50%; Tarbox Metal Snatch, 50%; Tarbox New Style Steel, 50&10%; Wire Rope Snatch, 50%.
Lane's Patent Automatic Lock and Junior 30%
Stowell's Novelty, Mal. Iron.....50&10%
Stowell's Self Loading.....60%
See also Machines, Hoisting.

Boards, Stove—

Zinc, Crystal, &c.....40%
Paper Embossed.....40&10%

Boards, Wash—

See *Washboards.*

Bobs, Plumb—

Keuffel & Esser Co.....33⅓%

Bolts—

Carriage, Machine, &c.—

Common Carriage (cut thread): ⅝ x 6 and smaller.....75@—%
Larger and Longer..65&5@—%
Phila. Eagle, $3.00 list May 24, '99 80%
Bolt Ends, list Feb. 14, '95.... 65&10@—%
Machine, ⅝ x ¼ and smaller 75@—%
Machine, larger and longer.. 65&5@—%

Door and Shutter—

Cast Iron Barrel, Japanned, Round Brass Knob:

Inch.....	*3*	*4*	*5*	*6*	*8*
Per doz.	*$0.30*	*.35*	*.45*	*.60*	*.80*

Cast Iron Spring Foot, Jap'd:

Inch.....	*6*	*8*	*10*
Per doz.....	*$1.20*	*1.50*	*2.25*

Cast Iron Chain, Flat, Japanned:

Inch.....	*6*	*8*	*10*
Per doz.....	*$1.00*	*1.40*	*1.85*

Cast Iron Flat Shutter, Jap'd., Brass Knobs:

Inch.....	*6*	*8*	*10*
Per doz.....	*$0.75*	*.95*	*1.25*

Wrt Barrel Japd.....80@80&10%
Wrt " Bronzed....50@50&10%
Wrt. Spring...70&10@70&10&10%
Wrt. Shutter.....50&5@50&10&5%
Wrt. Square Neck.....75@75&10%
Wrt Square.68⅔&10@68⅔&10&10%
Ives' Patent Door.....60%

Plow and Stove—

Plow .....65&10@—
Stove .....87½&10@—

Tire—

Norway Iron.....80%
Norway Iron.....80%
American Screw Company:
Norway Phila., list Oct. 16, '84...80%
Eagle Phila., list Oct. 16, '84....82½%
Bay State, list Dec. 28, '99.....80%
Franklin Moore Co.:
Norway Phila., list Oct. 16, '84...80%
Eagle Phila., list Oct. 16, '84....82½%
Eclipse, list Dec. 28, '99.....80%
Mount Carmel Bolt Co.:
Norway Phila., list Oct. 16, '84....80%
Eagle Phila., list Oct. 16, '84....82½%
Mount Carmel, list Dec. 28, '99...80%
Russell, Burdsall & Ward Bolt & Nut Co.:
Empire, list Dec. 28, '99.....80%
Norway Phila., list Oct., '84.....80%
Upson Nut Co.:
Tire Bolts.....72½%

Borers, Tap—

Borers Tap, Ring, with Handle:

Inch.....	*1¼*	*1½*	*1¾*	*2*
Per doz...	*$4.80*	*5.60*	*6.40*	*8.00*
Inch	*2¼*	*2½*		
Per doz.....	*$8.65*	*11.50*		

Enterprise Mfg. Co., No. 1, $1.25; No. 2, $1.65; No. 3, $2.50 each.....25%

Boxes, Mitre—

C. E. Jennings & Co.....30%
Langdon .....15&10%
Perfection 40%
Seavey 33⅓%
Stanley R. & L. Co.:
Nos. 240 to 460.....30%
Nos. 50 and 60.....35%

Braces—

Common Ball, American..$1.25@1.30
Barber's .....50&10&10@60&10%
Fray's Genuine Spofford's.....60%
Fray's No. 70 to 120, 81 to 123, 207 to 414 .....60%
C. E. Jennings & Co.....50&5%
Mayhew's Ratchet.....60%
Mayhew's Quick Action Hay Pat....50%
Millers Falls Drill Braces.....25&10%
P., S. & W. Co., Peck's Pat.60@60&5%
Stanley R. & L. Co.:
Stanley 35%
Victor 45%

Brackets—

Wrought Steel..80&10@80&10&5%
Griffin's Pressed Steel.....80@80&10%
Griffin's Folding Brackets.....70&10%
Stowell's Cast Shelf.....75%
Stowell's Sink.....50%
Western, W. G. Co., Wire.....60&10%

Bright Wire Goods—

See *Wire and Wire Goods.*

Broilers—

Kilbourne Mfg. Co.....75&20%
Western, W. G. Co.....80%
Wire Goods Co.....75@75&10%

Buckets, Galvanized—

Price per dozen.

Quart.....	*10*	*12*	*14*
Water, Regular...	*1.40*	*1.70*	*1.90*
Water, Heavy....	*3.40*	*3.70*	*3.80*
Fire, Rd. Bottom..	*2.30*	*2.55*	*2.95*
Well	*2.55*	*2.87*	*3.15*

Bucks, Saw—

Hoosier.....℔ gro. $36.00

Bull Rings—See *Rings, Bull*

Butts— Brass—

Wrought, list, Sept., '96.15@—%
Cast Brass, Tiebout's.....50%

Cast Iron—

Fast Joint, Broad....40&10@50%
Fast Joint, Narrow...40&10@50%
Loose Joint.....70&10@75%
Loose Pin.....70&10@75%
Mayer's Hinges.....70@70&15%
Parliament Butts.....70@70&15%

Wrought Steel—

Table and Back Flaps...75%
Narrow and Broad.....75%
Inside Blind.....75%
Loose Pin.....75%
Loose Pin, Jap'd.....70&10%
Loose Pin, Ball and Steeple Tip 85%
Japanned Ball Tip Butts.... 70&10%
Bronzed, Wrt., Nar. and Inside Blind Butts....55&10%

Ex. 10&10&10@10&10&10&10&5%

Cages, Bird—

Hendryx, Brass:
3000, 5000, 1100 series.....5%
1200 series.....33⅓%
200, 300, 600 and 900 series.....40&10%
Hendryx Bronze:
700, 800 series.....40&10%
Hendryx Enameled.....40&10%

Calipers—See *Compasses.*

Calks, Toe and Heel—

Blunt, 1 prong.....per lb. 4@4¼ ¢
Sharp, 1 prong...per lb., 4¼@4⅝ ¢
Burke's Blunt.....4@4¼ ¢
Burke's Sharp.....4¼@4⅝ ¢

Gautier, Blunt.....4@4¼¢
Gautier, Sharp.....4½@4¾¢
Perkins', Blunt Toe.....₩ lb 3.65¢
Perkins', Sharp Toe.....₩ lb 4.15¢

Can Openers—
See *Openers, Can.*

Cans, Milk—

	5	8	10 gal.
Illinois Pattern	$1.35	1.85	2.05 each.
New York Pattern	1.50	2.20	2.45 each.
Baltimore Pattern	1.50	2.20	2.45 each.
Dubuque	1.35	1.60	1.75 each.

Cans, Oil—
Buffalo Family Oil Cans:

3	5	10 gal.
$48.00	60.00	120.00 gro., net.

Caps, Percussion—
Eley's E. B......52@55¢
G. D......*per M* 34@35¢
F. L......*per M* 40@42¢
G. E......*per M* 48@50¢
Musket.....*per M* 62@63¢

Primers—
Berdan Primers, $2 per M...80%
B. L. Caps (Sturtevant Shells) $2 per M.....20%
All other primers per M.$1.52@1.60

Cartridges—
Blank Cartridges:
32 C. F., $5.50.....10&5%
38 C. F., $7.00.....10&5%
22 cal. Rim, $1.50.....10&5%
32 cal. Rim, $2.75.....10&5%
B. B. Caps, Con. Ball, Swgd. $1.90
B. B. Caps, Round Ball....$1.49
Central Fire.....25%
Target and Sporting Rifle..15&5%
Primed Shells and Bullets.15&10%
Rim Fire, Sporting.....50%
Rim Fire, Military.....15&5%

Casters—
Bed.....70@70&10%
Plate.....60&10@60&10&5%
Philadelphia.....75@75&10%
Acme, Ball Bearing.....33⅓%
Boss.....70&10%
Boss Anti-Friction.....70&10%
Gem (Roller Bearing).....80%
Martin's Patent (Phoenix).....45%
Standard Ball Bearing.....45%
Tucker's Patent low list.....30%
Yale (Double Wheel) low list.....50%

Cattle Leaders—
See *Leaders, Cattle.*

Chain, Coil—
American Coil, Straight Link:

5-16	¼	5-16	⅜	7-16	½	9-16
$3.70	5.90	4.95	4.20	4.05	3.95	3.90
⅝	¾	⅞ to 1	1⅛ to 1¼ inch.			
$3.85	3.70	3.65	3.80			

German Coil.....60&10&10@70%

Halter—
Halter Chains.....60&5@60&10%
German Pattern Halter Chains, list July 24, '97.....60&10@10%
Covert Mfg. Co, Halter.....35&5%
Covert's Saddlery Works Halter.....70%

Cow Ties—
See *Halters and Ties.*

Trace, Wagon, &c.—
Traces, Western Standard: 100 pr.
6½—6-3, Str'ght, with ring..$25.00
6½—6-2, Str'ght, with ring..$26.00
6½—8-2, Str'ght, with ring..$30.00
6½—10-2, Str'ght, with ring..$35.00
NOTE.—Add 2o per pair for Hooks. Twist Traces 2o per pair higher than Straight Link.
Eastern Standard Traces, Wagon Chain, &c......60&10%

Miscellaneous—
Jack Chain, list July 10, '93:
Iron.....60&10&5@70%
Brass.....60&10@60&10&10%
Safety Chain.....75@75&10%
Gal. Pump Chain.....*lb* .4@4½%
Covert Mfg. Co.: Breast, Halter, Heel, Rein, Stallion.....40%
Covert Sad. Works: Breast, Hold Back, Rein.....70%
Oneida Community: Am. Dog Leads and Kennel Chains, 40@40&5%
Niagara Dog Leads and Kennel Chains.....45@60&5%
Wire Goods Co.: Dog Chain.....70&10%
Universal Dbl.-Jointed Chain.....50%

Chain and Ribbon, Sash—
Oneida Community: Copper Chain.....60&5%
Steel Chain.....60%
Pullman: Bronze Chain.....60%
Steel Chain.....60&10%
Sash Chain Attachments, per set..8¢
Aluminoy Sash Ribbon, per 100 ft.....$1.25@$3.00
Sash Ribbon Attachments, per set..8¢

Chalk—(From Jobbers.)
Carpenters' Blue.....*gro.* 38@40¢
Carpenters' Red.....*gro.* 35@35¢
Carpenters' White....*gro.* 28@30¢
See also Crayons.

Checks, Door—
Bardsley's.....43%
Eclipse.....60&10%
Pullman, per gro.....$54.00
Russwin.....60%

Chests, Tool—
American Tool Chest Co.: Boy's Chests, with Tools.....55%
Youths' Chests, with Tools.....40%
Gentlemen's Chests, with Tools..30%
Farmers', Carpenters', etc., Chests, with Tools.....20%
Machinists' and Pipe Fitters' Chests, Empty.....50%
Tool Cabinets.....50%
C. E. Jennings & Co.'s Machinists' Tool Chests.....33⅓&10%

Chisels—
Socket Framing and Firmer
Standard List.....75@75&10%
Buck Bros.....30%
Charles Buck.....30%
C. E. Jennings & Co. Socket Firmer No. 10.....60%
C. E. Jennings & Co. Socket Framing No. 15.....60%
Ohio Tool Co.'s.....70%
Swan's.....75%
L. & I. J. White.....30@30&5%
L. & I. J. White, Tanged.....25&5%

Tanged—
Tanged Firmers.....*33 1-3@40%*
Buck Bros.....30%
Charles Buck.....30%
C. E. Jennings & Co. Nos. 191, 181..25%

Cold—
lb.
Cold Chisels, good quality..13@15¢
Cold Chisels, fair quality..11@12¢
Cold Chisels, ordinary... 9@10¢

Chucks—
Almond Drill Chucks.....35%
Almond Turret Six-Tool Chuck....35%
Beach Pat., each $8.00.....35&5%
Empire.....25%
Blacksmiths'.....25%
Jacobs' Drill Chucks.....35%
Pratt's Positive Drive.....25%
Skinner Patent Chucks: Independent Lathe Chucks....40&10%
Universal, Reversible Jaws.....40%
Combination, Reversible Jaws.....40%
Drill Chucks, New Model.....25%
Drill Chuck, Standard.....40&10%
Drill Chuck, Skinner Pat.....25%
Drill Chucks, Positive Drive.....33⅓%
Planer Chucks.....30%
Face Plate Jaws.....40&10%
Standard Tool Co.: Improved Drill Chuck.....45%
Union Mfg. Co.: Combination.....50%
Czar Drill.....35%
Combination Geared Scroll.....40%
Geared Scroll.....40%
Independent.....50%
Independent Steel.....40%
Union Drill.....45%
Universal.....50%
Independent Iron F. Plate Jaws.40%
Independent Steel F. Plate Jaws.40%
Westcott Patent Chucks: Lathe Chucks.....50%
Little Giant Auxiliary Drill.....50%
Little Giant Double Grip Drill..50%
Little Giant Drill, Improved.....50%
Oneida Drill.....50%
Scroll Combination Lathe.....50%

Clamps—
Adjustable, Hammers'.....20@20&5%
Cabinet, Sargent's.....50&10%
Carriage Makers', P., S. & W. Co.....40&10@50%
Carriage Makers', Sargent's.....40%
Besly, Parallel.....33⅓&10%
Lineman's, Utica Drop Forge & Tool Co.....40%
Wood Workers, Hammers'.....40&10%
Saw Clamps, see Vises, Saw Filers'.

Cleaners, Drain—
Iwan's Champion, Adjustable.....55%
Iwan's Champion, Stationary.....47%

Sidewalk—
Star Socket, All Steel..₩ doz. $4.05 net
Star Shank, All Steel..₩ doz. $3.24 net
W. & C. Shank, All Steel, ₩ doz., 7½ in., $3.00; 8 in., $3.25.

Cleavers, Butchers'—
Foster Bros.....30%
New Haven Edge Tool Co.'s.....45%
Fayette R. Plumb.....30%
L. & I. J. White.....30%

Clippers, Horse and Sheep—
Chicago Flexible Shaft Company: '98 Chicago Horse, each...$3.75
1902 Chicago Horse, each..$10.75
20th Century Horse, each..$5.00
Lightning Belt Horse, each.$15.00
Chicago Belt Horse, each.$20.00
Stewart's Enclosed Gear Horse, each.....$6.75
Stewart's Patent Sheep Shearing Machine, each.....$12.75
} 25%

Clips, Axle—
Regular Styles, list July 1, '05.80%

Cloth and Netting, Wire—See *Wire, &c.*

Cocks, Brass—
Hardware list:
Compression, Plain Bibbs, Globe, Kerosene, Racking, &c., Cocks.....75@75&10%

Coffee Mills—
See *Mills, Coffee.*

Collars, Dog—
Nickel Chain, Walter B. Stevens & Son's list.....40%
Leather, Walter B. Stevens & Son's list.....40%

Combs, Curry—
Metal Stamping Co.....40%

Mane and Tail—
Covert's Saddlery Works.....60&10%

Compasses, Dividers, &c.
Ordinary Goods.....75&5@75&10%
Bemis & Call Hdw. & Tool Co.: Dividers.....65%
Calipers, Double.....65%
Calipers, Inside or Outside.....65%
Calipers, Wing.....60%
Compasses.....50%
Wm. Schollhorn Co.: Excelsior Dividers.....60%
Lodi Dividers.....75%

Conductor Pipe,—
L. C. L. to Dealers:

Territory:	*Galvanized Galv. Steel.*	*Charcoal Iron.*	*Copper.*
Eastern:			
	70&10 %	60&7½%	50%
Central:			
	70& 2½%	60 %	40&10&5%
Western and S. W.:			
	65&10 %	50&10&2½%	47½%
So. Western			
	62½&7½%	50&5%	40&10%
	Copper.		
Eastern	14&16 oz.		
	.50&10%		
Central	.50&7½%		
Southern	.50&5%		
So. Western	.50&2½%		

Terms, 60 days; 2% cash 10 days. Factory shipments generally delivered.
See also Eave Troughs.

Coolers, Water—

Gal, each..	2	3	4	6	8
Labrador	$1.20	$1.50	$1.80	$2.10	$2.70
Gal.	3	4	6	8	
Iceland, ea.	$1.80	$2.10	$2.40	$3.00	
Gal.	2	3	4	6	8
Galvanized, ea.	$1.85	$2.00	$2.25	$2.90	$3.90
Galvanized, Lined, side handles, Gal,	2	3	4	6	8
Each	$1.95	$2.15	$2.40	$3.30	$4.15
White Enameled	25%				
Agate Lined	25%				

Coopers' Tools—
See *Tools, Coopers'.*

Coppers' Soldering—
Soldering Coppers, 3 lbs. to pair and heavier, 23@24½¢; lighter than 3 lbs. to pair.....25@26¢

Cord—Sash—
Braided, Drab.....*lb.* 35¢
Braided, White, Com., Nos. 8 to 12, 24½¢; No. 7, 24½¢; No. 6, 25½¢.
Cable Laid Italian.....
lb., A, 18¢; B, 16¢
Common India.....lb. *10@10½¢*
Cotton Sash Cord, Tw'ted..17@19¢
Patent Russia.....*lb.*...@14¢
Cable Laid Russia....*lb.*...@15¢
India Hemp, Braided..*lb.*...@18¢
India Hemp, Twisted..*lb.* 12@13¢
Patent India, Twisted.*lb.* 12@13¢
Anniston Cordage Co.: ₩ lb, solid Braided, Nos. 8 to 12, $0.24; No. 7, $0.24½; No. 6, $0.25½; ₩ doz., 50 ft., Oriole, $2.00; 50 ft., Columbia, $0.85; 50 ft., Victors, $1.00; 50 ft., 6-Thread, $1.10; 60 ft., 3-Thread, $0.95; 50 ft., Manila, $1.40; 60 ft., Jute, $0.75.
Pearl Braided, cotton, No. 6, ₩ lb, 25½¢; No. 7, 25¢; Nos. 8 to 12, 24½¢
Eddystone Braided, Nos. 8, 9 and 10, 25¢; 7, 25½¢; 6, 26½¢.
Harmony Cable Laid Italian, Nos. 7 to 10.....₩ lb 23 ¢
Peerless: Cable Laid Italian.....16 ¢
Cable Laid Russian.....14 ¢
Cable Laid India.....12 ¢
Braided India.....18 ¢
Pullman: Wire Sash Cord.....10%
Sash Cord Attachments, per doz.10¢
Samson, Nos. 8 to 12: Braided, Drab Cotton.....₩ lb 40 ¢
Braided, Italian Hamp....₩ lb 40 ¢
Braided, Linen.....₩ lb 55 ¢
Braided, White Cotton or Spot....₩ lb 35 ¢
Massachusetts, White.....₩ lb 30 ¢
Massachusetts, Drab.....₩ lb 35 ¢
Phoenix, White, Nos. 8 to 12, 27¢; No. 7, 27½¢; No. 6, 28½¢.
Silver Lake: A, Drab.....45 ¢
A, White.....40 ¢
B, Drab.....40 ¢
B, White.....35 ¢
Italian Hemp.....40 ¢
Linen.....57½¢
See also Chain and Ribbon.

Wire, Picture—
List Oct., '00.....
85&10&10@85&10&10&5%
Hendryx Standard Wire Picture Cord, 85&10%

Cradles—
Grain.....*40&12½%*

Crayons—
White Round Crayons, gr. 6@6½¢
Cases, 100 gro., $5.00 at factory.
D. M. Steward Mfg. Co.: Genuine, Per gro. Round Pencil, $2.25; Square Pencil, $1.75; Flat Crayon, $2.50; Metal Workers' Crayon, $3.00; Rolling Mill Crayon, $3.00.
Compo. Per gro. Round Pencil, $1.50; Square Pencil, $1.50; Flat Crayon, $1.50; Metal Workers' Crayon, $2.50; Rolling Mill Crayon, $2.50; Railroad Crayon, $1.00; Compo. Crayon, $4.00.
} Case lots, 20%
} Case lots, 50&20%
Zelnicker's Lumber: Red, Blue, Green.....₩ gro. $6.50
Black.....₩ gro. $4.00
See also Chalk.

Crooks, Shepherds'—
Fort Madison, Heavy.....₩ doz. $7.00
Fort Madison, Light.....₩ doz. $6.50

Crow Bars—See *Bars, Crow.*

Cultivators—
Victor Garden.....50%

Cutlery, Table—
International Silver Company: No. 12 M'd'm Knives, 1847..₩ doz. $3.50
Star, Eagle, Rogers & Hamilton and Anchor.....₩ doz. $3.00
Wm. Rogers & Son.....₩ doz. $2.50

Cutters—Glass—
H. H. Mayhew Co.....40%
Red Devil.....50%
Smith & Hemenway Co.....50%
Woodward.....40%

Meat and Food—
American.....30%

Nos.	1	2	3	4	B	5
Each	$5	$7	$10	$25	$50	$60

Enterprise.....25@25&7½%

Nos.	5	10	12	22	32
Each	$2	$3	$2.75	$4.50	$6

Dixon's.....₩ doz. 40@50%

Nos.	1	2	3	4
	$14.00	$17.00	$19.00	$30.00

Ideal.....40&10@50%
Little Giant.....₩ doz. 40@50%

Nos.	305	310	312	320	322
	$35.00	$48.00	$44.00	$72.00	$68.00

N. E. Food Choppers.....25%
New Triumph No. 605, ₩ doz. $24.00.. 10@50%
Russwin Food, No. 1, $24.00; No. 2, $27.00.....45&10&10%
Woodruff's.....₩ doz. 40@50%

Nos.	100	150
	$15.00	$18.00

Enterprise Beef Shavers.....25@30%

Slaw and Kraut—
Henry Disston & Sons: Slaw, Corn Grater, &c.....40%
Kraut Cutters, 24 x 7, 26 x 8, 30 x 9.....55%
Kraut Cutters, 36 x 12, 40 x 12....40%
J. M. Mast Mfg. Co.: Slaw Cutters, 1 Knife....₩ doz. $3.00
Combined Slaw Cutter and Corn Grater.....₩ doz. $4.00
Tucker & Dorsey Mfg. Co.: Kraut Cutters.....40%
Slaw Cutters, 1 Knife..₩ gr. $18@$20
Slaw Cutters, 2 Knife..₩ gr. $22@$30

Tobacco—
All Iron, Cheap..*doz.* $4.25@$4.50
Enterprise.....25@30%
National, ₩ doz., No. 1, $21; No. 2, $18.....40%
Sargent's, ₩ doz., No. 2.....60%
Sargent's, Nos. 12 and 21.....60&10%

Washer—
Appleton's, ₩ doz., $16.00....50&10&10%

Diggers, Post Hole, &c.—
Dalbey Post Hole Auger..per doz., $9.00
Iwan's Imp'ved Post Hole Auger.40&5%
Iwan's Vaughan Pattern Post Hole Augers.....₩ doz. $6.25
Iwan's Perfection Post Hole Digger..₩ doz. $8.25
Iwan's Split Handle Post Hole Diggers.....₩ doz. $7.25
Kohler's Universal.....₩ doz. $14.00
Kohler's Little Giant.....₩ doz. $12.00
Kohler's Hercules.....₩ doz. $10.00
Kohler's Invincible.....₩ doz. $9.00
Kohler's Rival.....₩ doz. $8.00
Kohler's Pioneer.....₩ doz. $7.00
Never-Break Post Hole Diggers, ₩ doz., $24.00.....60%
Samson, ₩ doz. $34.00.....25%

Dividers—See *Compasses.*

Drawers, Money—
Tucker's Pat. Alarm Till No. 1, ₩ doz., $18; No. 2, $15; No. 3, $12; No. 4, $18.

Drawing Knives—
See *Knives, Drawing.*

Dressers, Emery Wheel—
Diamond Emery Wheel Dressers....35%
Diamond Wheel Dresser Cutters....35%

Drills and Drill Stocks—
Common Blacksmiths' Drill, each.....*$1.50@$1.75*
Breast, Millers Falls.....15&10%
Breast, P., S. & W.....40%
Goodell Automatic Drills..40&5@40&10%
Johnson's Automatic Drills, Nos. 2 and 3.....16⅔%
Johnson's Drill Points.....16⅔%
Millers Falls Automatic Drills.33⅓&10%
Ratchet, Curtis & Curtis.....25%
Ratchet, Parker's.....40%
Ratchet, Weston's.....40%
Ratchet, Weston's, Style H Improved.....40%
Ratchet, No. 012.....40%
Ratchet, Whitney's, P., S. & W..50%
Whitney's Hand Drill, No. 1, $10.00; Adjustable, No. 10, $12.00.....33⅓%

Twist Drills—
Bit Stock.....*60&10&10@70%*
Taper and Straight Shank.....
60&10@60&10&5%

Drivers, Screw—
Screw D'ver Bits, per doz. 45@50¢
Balsey's Screw Holder and Driver, ₩ doz., 2½-in., $6; 4-in., $7.50; 6-in., $9.....50%
Buck Bros.' Screw Driver Bits.....30%
Champion.....50%
Edson.....60%
Fray's Hol. H'dle Sets, No. 3, $12..50%
Gay's Double Action Ratchet.....35%
Goodell's Auto..50&10&10@50&10&10&5%
Hurwood.....40%
Mayhew's Black Handle.....40%
Mayhew's Monarch.....40&10%
Millers Falls, Nos. 28 and 21...25&10%
Millers Falls, Nos. 11, 12, 41, 42..15&10%
New England Specialty Co.....50&10%
Sargent & Co.'s: Nos. 1 and 60.....50&10&10%
Nos. 50, 53 and 55.....60&10%
Nos. 20 and 40.....70&10%
Smith & Hemenway Co.....40&5%
H. D. Smith & Co.'s Perfect H'dle.40%
Stanley R. & L. Co.'s: No. 64, Varn. Handles.....65%
No. 88.....75%
Victor.....55%
Defiance.....70%
Swan's: Nos. 7565 to 7568.....50%
No. 7540.....40&10%

Eave Trough, Galvanized—

Territory.	*L. C. L. Galvanized Galv. Steel.*	*Charcoal Iron.*	*Copper.*
Eastern:			
	80&2½%	70&7½%	50%
Central:			
	75&10&7½%	70%	40&10&5%
Western and S. W.:			
	70&20&7½%	60&15&2½%	47½%
So. Western:			
	70&20%	65&2½%	40&10%

Terms.—2% for cash. Factory shipments generally delivered.
See also Conductor Pipe and Elbows.

Elbows and Shoes—
Factory shipments, all territories:

	Galv. Steel and Galv. C. I.
Gauge	.60&10%
No. 26	.50%
No. 24	.25%
No. 22	.10%
Copper	.50%

Elbows, Stove Pipe—
Dover, one piece.....40%
Perfect Elbows (R. M. Co.).....40%

Emery, Turkish—

	¼ to 46	*5 to 220 Flour.*
Kegs	*lb.* 5 ¢	5¼¢ 5¼¢
½ Kegs	*lb.* 5¼¢	5¼¢ 5¾¢

¼ Kegs.....lb. 5½¢ 6 ¢ 4 ¢
10-lb. cans, 10 in case....6½¢ 7 ¢ 6 ¢
10-lb. cans, less than 10.....10 ¢ 10 ¢ 8 ¢
Less quantity..10 ¢ 10 ¢ 8 ¢
NOTE.—In lots 1 to 3 tons a discount of 10% is given.

Extractors, Lemon Juice
—See *Squeezers, Lemon.*

Fasteners, Blind—
Zimmerman's .....50&10%
Walling's .....40&10%

Cord and Weight—
Ives 40%

Faucets—
Cork Lined.....50@50&10%
Metallic Key, Leather Lined.. 60&10@70%
Red Cedar.....40&10@50%
Petroleum .....70&10@75%
B. & L. B. Co.:
Metal Key.....60&10%
Star 60%
West Lock.....50&10%
John Sommer's Peerless Tin Key....40%
John Sommer's Boss Tin Key.....50%
John Sommer's Victor Mtl. Key.50&10%
John Sommer's Duplex Metal Key..60%
John Sommer's Diamond Lock.....40%
John Sommer's I. X. L. Cork Lined..50%
John Sommer's Reliable Cork Lined.. 50&10%
John Sommer's Chicago Cork Lined.60%
John Sommer's O. K. Cork Lined...50%
John Sommer's No Brand, Cedar....50%
John Sommer's Perfection, Cedar....40%
McKenna, Brass:
Burglar Proof, N. P.....25%
Improved, ¾ and ⅞ inch.....25%
Self Measuring:
Enterprise, ℔ doz. $36.00.....40&10%
Lane's, ℔ doz. $36.00.....40&10%
National Measuring, ℔ doz. $36.40&10%

Felloe Plates—
See *Plates, Felloe.*

Files— Domestic—
List revised Nov. 1, 1899.
Best Brands.....70&10@75&10%
Standard Brands.75&10@75&10&10%
Lower Grade....75&10&10@80&10%

Imported—
Stubs' Tapers, Stubs' list, July 24, '97.....33 1-3@40%

Fixtures, Fire Door—
Richards Mfg. Co.:
Universal, No. 103.....$3.75
Special, No. 104.....$3.75
Fusible Links, No. 96.....50%
Expansion Bolts, No. 107.....60&10%

Grindstone—
Net Prices:

Inch	*15*	*17*	*19*	*21*
Per doz	$3.25	3.75	4.25	4.75

P. S. & W. Co.....30&10@40%
Reading Hardware Co.....60%
Sargent's 70%
Stowell's Giant Grindstone Hanger.. ℔ doz. $6.00
Stowell's Grindstone Fixtures, Extra Heavy .....50&10&10%
Stowell's Grindstone Fixtures, Light.. 60&10%

Fodder Squeezers—
See *Compressors.*

Forks—
NOTE.—Manufacturers are selling from the list of September 1, 1904, but many jobbers are still using list of August 1, 1899, or selling at net prices.
Iowa Dig-Em Potato.....60&10%
Victor, Hay.....60&15&2½%
Victor, Manure.....60%
Victor, Header.....60%
Champion, Hay.....60%
Champion, Header.....65%
Champion, Manure.....60&15&2½%
Columbia, Hay.....60&20%
Columbia, Manure.....70%
Columbia, Spading.....70&12½%
Hawkeye Wood Barley.....40%
W. & C. Potato Digger.....60&10%
Acme Hay.....60&20%
Acme Manure, 4 tine.....60&10&5%
Dakota Header.....60&20%
Jackson Steel Barley.....60&20%
Kansas Header.....65%
W. & C. Favorite Wood Barley.....40%
Plated.—See Spoons.

Frames— Saw—
White, S'g't Bar, per doz..75@80¢
Red, S'g't Bar, per doz..$1.00@1.25
Red, Dbl. Brace, per doz.$1.40@1.50

Freezers, Ice Cream—

Qt.	1	2	3	4	6
Each	*$1.50*	*$1.60*	*$1.90*	*$2.20*	*$2.80*

Fruit and Jelly Presses—
See *Presses, Fruit and Jelly.*

Fry Pans—See *Pans, Fry.*

Fuse— *Per 1000 Feet.*
Hemp $2.75
Cotton 3.20
Waterproof Sgl. Taped..3.65
Waterproof Dbl. Taped..4.40
Waterproof Tpl. Taped..5.15
} 10% off

Gates, Molasses and Oil—
Stebbins' Pattern.....80&10%

Gauges—
Marking, Mortise, &c..50&10@60%
Chapin-Stephens Co.:
Marking, Mortise, &c.50&10@50&10&10%
Scholl's Patent.....50&10@50&10&10%
Door Hangers.....50@50&10%
Stanley R. & L. Co.'s Butt and Rabbet Gauge.....25%
Marking and Mortise.....60%
Wire, Brown & Sharpe's.....25%
Wire, Morse's.....25%
Wire, P., S. & W. Co.....33⅓%

Gimlets— Single Cut—
Numbered assortments, per gro.
Nail, Metal, No. 1, $2.00; 2, $2.30
Spike, Metal, No. 1, $4.00; 2, $4.30
Nail, Wood Handled, No. 1, $2.30; 2, $2.60
Spike, Wood Handled, No. 1, $4.30; 2, $4.60

Glass, American Window
See *Trade Report.*

Glasses, Level—
Chapin-Stephens Co.....60@60&10&10%

Glue, Liquid Fish—
Bottles or Cans, with Brush.. 25&10@50%
International Glue Co. (Martin's)..40%

Grease, Axle—
Common Grade....gro. $4.50@6.00
Dixon's Everlasting..10-lb pails, ea. 85¢
Dixon's Everlasting, in boxes, ℔ doz. 1 lb, $1.20; 2 lb, $2.00
Helmet Hard Oil.....25%

Griddles, Soapstone—
Pike Mfg. Co.....33⅓@33⅓&10%

Grindstones—
Bicycle Emery Grinder.....$6.50
Bicycle Grindstones, each.....$2.50@3.00
Pike Mfg. Co.:
Improved Family Grindstones, per inch, ℔ doz.....$2.00
Pike Mower and Tool Grinder, each $6.00
} 25%
Velox Ball Bearing, Mounted, Angle Iron Frames, each.....$3.00

Grips, Nipple—
Perfect Nipple Grips.....40&10&2%

Halters and Ties—
Cow Ties.....60&10@60&10&5%
Covert Mfg. Co.:
Web 45%
Jute Rope.....45%
Sisal Rope.....33⅓%
Cotton Rope.....45%
Hemp Rope.....45%
Covert's Saddlery Works:
Web and Leather Halters.....70%
Jute and Manila Rope Halters....70%
Sisal Rope Halters.....60&20%
Jute, Manila and Cotton Rope Ties 70%
Sisal Rope Ties.....60&10%
Oneida Community:
Am. Coil and Halters.....40@40&5%
Am. Cow Ties.....45@50%
Niagara Coil and Halters..45@50&5%
Niagara Cow Ties....45&5@50&10&5%
E. T. Rugg & Co.:
Leather Halters.....50%
Web Halters and Webbing.....60%
Jute and Sisal Rope Halters.....60%
Jute and Sisal Horse and Cattle Ties 60%
Cotton Horse Ties.....60%
Livery Ties, Braided.....60%

Hammers—
Handled Hammers—
Heller's Machinists'...40&10@40&10&10%
Heller's Farriers.....40&10@40&10&10%
Magnetic Tack, Nos. 1, 2, 3, $1.25, $1.50, $1.75.....50%
Peck, Stow & Wilcox, Steel.....50%
Fayette R. Plumb:
Plumb, A. E. Nail.....33⅓&7½@33⅓&10&7½%
Engineers' and B. S. Hand.....50&7½&5@50&10&7½&5%
Machinists' Hammers.50&5@50&10&5%
Riveting and Tinners'.....40&2½@40&10&2½%
Sargent's C. S. New List.....40%

Heavy Hammers and Sledges—
Under 3 lb., per lb., 50¢...80&10%
3 to 5 lb., per lb., 40¢.....80&10%
Over 5 lb., per lb., 30¢..80&10&10%
Wilkinson's Smiths'...lb. 9½@10¢

Handles—
Agricultural Tool Handles
Axe, Pick, &c....60&10@60&10&5%
Hoe, Rake, &c.....45@50%
Fork, Shovel, Spade, &c.:
Long Handles.....45@50%
D Handles.....50@50&5%

Cross-Cut Saw Handles—
Atkins' 40%
Champion .....45@45&10%
Disston's 50%

Mechanics' Tool Handles—
Auger, assorted...gro. $2.50@3.00
Brad Awl.....gro. $1.65@1.75
Chisel Handles:
Apple Tanged Firmer, gro. assorted .....$2.40@2.65
Hickory Tanged Firmer, gro. assorted .....$2.15@2.40
Apple Socket Firmer, gro. assorted .....$1.75@1.95
Hickory Socket Firmer, gro. assorted .....$1.45@1.60
Hickory Socket Framing, gro. assorted .....$1.60@1.75
File, assorted.....gro. $1.30@1.40
Hammer, Hatchet, &c. 60&10@60&10&5%
Hand Saw, Varnished, doz. 80¢85¢; Not Varnished...65@75¢
Plane Handles:
Jack, doz. 30¢; Jack, Bolted.75¢
Fore, doz. 45¢; Fore, Bolted.90¢
Chapin-Stephens Co.:
Carving Tool.....40@40&10%
Chisel .....65@65&10%
File and Awl.....65@65&10%
Saw and Plane.....40@40&10%
Screw Driver.....40@40&10%
Millers Falls Adj. and Ratchet Auger Handles .....15&10%
Nicholson Simplicity File Handle.... ℔ gro. $0.85@$1.50

Hangers—
NOTE—Barn Door Hangers are generally quoted per pair, without track, and Parlor Door Hangers per double set with track, &c
Allith Mfg. Co.:
Reliable, No. 1.....per doz. $0.00
Reliable, No. 2.....per doz. $0.00
Chicago Spring Butt Co.:
Friction 25%
Oscillating 25%
Big Twin.....25%
} Extra 10% often given.
Chisholm & Moore Mfg. Co.:
Baggage Car Door.....50%
Elevator 30%
Railroad 50%
Cronk & Carrier Mfg. Co.:
Loose Axle.....60&10%
Roller Bearing.....70%
Griffin Mfg. Co.:
Solid Axle, No. 10, $12.00.....70%
Roller Bearing, No. 11, $15.00.70%
Roller Bearing, Ex. Hy., No. 22, $18.00.....70%
Hinged Hangers, $16.00.....60&10%
Lane Bros. Co.:
Parlor, Ball Bearing.....$4.00
Parlor, Standard.....3.15
Parlor, No. 105.....2.85
Parlor, New Model.....2.80
Parlor, New Champion.....2.25
Barn Door, Standard.....60&5%
Hinged.....net $6.40
Covered .....60&2%
Special .....70&5%
Lawrence Bros.:
Advance .....60&10%
Cleveland 75%
Clipper, No. 75.....60%
Crown .....60&10%
Easy Parlor Door, Dbl. Sets, $2.50; Single Sets, $1.25.
Giant .....60&5%
Hummer .....70&5%
New York.....60&10%
Peerless 75%
Sterling .....60&10%
McKinney Mfg. Co.:
No. 1, Special, $15.....60&10%
No. 2, Standard, $15.....60&10%
Hinged Hangers, $16.....50%
Meyers' Stayon Hangers.....60&5%
Richards Mfg. Co.:
Hangers, Nos. 47, 48, 147, 247, 60&5%
Pioneer Wood Track No. 3..$2.00
Ball B'r'g St'l Track No. 10.50&10%
Roller B'r'g St'l Track No. 12.$2.15
Roller B'r'g St'l Track No. 13.$2.30
Roller B'r'g, Nos. 39, 41, 43, 70&10%
Hero, Adj. Track No. 19..50&10%
Adjustable Track Tandem Trolley Track No. 16.....50&10%
Seal, Steel Track No. 8.....$2.25
Auto Adj. Track No. 22..50&10%
Trolley B. D. No. 17.....$1.25
Trolley F. D. No. 120.....$2.10
Trolley F. D. No. 121.....$2.25
Trolley F. D. No. 150.....$2.35
Safety Underwriters F. D. No. 101 .....50%
Tandem No. 44, 2¾ and 3 60&10%
Palace, Adjustable Track No. 132 .....50&10%
Royal, Adjustable Track No. 122 .....50&10%
Ives' Wood Track No. 1.....$2.00
Trolley B. D. No. 20.....50&10%
Trolley B. D. No. 24.....$1.30
Trolley B. D. No. 27.....$1.40
Trolley B. D. No. 28.....$1.60
Roller Bearings, Nos. 37, 38, 39, 41, 43; 44, Sizes 1 and 2..70&10%
Anti-friction, No. 42.....60&10%
Anti-friction, No. 44, Sizes 2¼ and 3.....60&10%
Hinged Tandem No. 48....60&5%
Folding Door B. B. Swivel No. 135 .....40%
Safety Door Hanger Co.:
Storm King Safety.....60%
U. S. Standard Hinge.....60%
Stowell Mfg. & Foundry Co.:
Acme Parlor Ball Bearing....40%
Ajax Hinge Door.....60
Apex Parlor Door.....50&10&5
Atlas 60
Baggage Car Door.....50
Climax Anti-Friction.....50&10
Elevator 40
Express 50
Freight Car Door.....60
Interstate .....60&10
Lundy Parlor Door.....50&10
Magic 60
Matchless .....60&10
Nansen .....70&5
Parlor Door.....50&10
Railroad .....50&10
Rex Hinge Door.....60
Street Car Door.....50
Steel, Nos. 300, 404, 500....50&10
Underwriters' Fire Door.....40
Wild West Warehouse Door..50
Zenith for Wood Track....50&10
A. L. Sweet Iron Works:
Check Back.....70%
Climax Anti-Friction.....50&10%
Eagle 70
Hylo Hinge.....60
New Perfection.....60
Pilot 60
Pilot Hinge.....60
Rider Wooster.....65
Western Pattern.....70
Taylor & Boggis F'y Co.'s Kidder's Roller Bearing.50&15&10&5%
Wilcox Mfg. Co.:
Bike Roller Bearing..℔ doz. $5.00
C. J. Roller Bearing.....60&10%
Cycle Ball Bearing.....50
Dwarf Ball Bearing.....40
Ives, Wood Track.....60&10%
L. T. Roller Bearing.....60&10&5%
New Era Roller Bearing..50&10%
O. K. Roller Bearing..60&10&5%
Prindle, Wood Track.....60
Richards' Wood Track.....60
Richards' Steel Track.....50&10%
Spencer Roller Bearing....60&10%
Tandem, Nos. 1 and 2.....60
Underwriters' Roller Bearing..40%
Velvet 50
Wilcox Auditorium Ball B'r'g.20%
Wilcox Barn Trolley No. 123..40%
Wilcox Elv. Door, Nos. 112 and 122½.....50%
Wilcox Elv. Door, No. 132.....40%
Wilcox Fire Trolley, Roller Bearing.....30%
Wilcox Le Roy Noiseless Ball Bearing 40%
Wilcox New Century..50&10&10%
Wilcox O. K. Steel Track....50%
Wilcox O. K. Trolley.....50%
Wilcox Trolley Ball Bearing..40%
Wilcox Wideman Narrow Gauge Ball Bearing.....40%
For Track, see Rail.

Hangers— Garment—
Pullman Trouser, ℔ gro., 1 pair Flat Aluminoy, $9.00; 1 pair Round Nickeled, $9.00; 4 pair Round Nickeled.. $27.00
Victor Folding.....℔ gro. $9.00
Western, W. G. Co.....70&10%

Gate—
Myers' Patent Gate Hangers, ℔ doz. net $4.50

Joist and Timber—
Lane Bros. Co.....30%

Hasps—
Griffin's Security Hasp.....50%
McKinney's Perfect Hasp, ℔ doz..50%

Hatchets—
Regular list, first quality....50%
Second quality $1.00 per doz. less than first quality.

Heaters, Carriage—
Clark, No. 5, $1.75; No. 5B, $2.00; No. 3, $2.25; No. 3D, $2.75; No. 7D, $3.00; No. 3E, $3.25; No. 1, $3.50.....15%
Clark Coal, ℔ doz. $0.75.....10%

Hinges—
Blind and Shutter Hinges—
Surface Gravity Locking Blind: (Victor; National; 1868 O. P.; Niagara; Clark's O. P.; Clark's Tip; Buffalo.)

No.	*1*	*3*	*5*
Doz. pair	$0.75	1.35	2.70

Mortise Shutter: (L. & P., O. S., Dixie, &c.)

No.	*1*	*1½*	*2*	*2½*
Doz. pair	$0.70	.65	.60	.55

Mortise Reversible Shutter (Buffalo, &c.):

No.	*1*	*1½*	*2*
Doz. pair	$0.70	.65	.60

North's Automatic Blind Fixtures, No. 2, for Wood, $9.00; No. 3, for Brick, $11.50.....10%
Charles Parker Co.....70@75%
Parker Wire Goods Co.:
Hale & Benjamin Automatic Blind Hinges 20%
Hale's Blind Awning Hinges, No. 110, for wood, $9.00; No. 111, for brick, $9.00.....20%
Reading's Gravity.....60%
Sargent's, Nos. 1, 3, 11 and 13..75&10%
Stanley's Steel Gravity Blind Hinges, ℔ doz. sets, without screws, $0.90; with screws, $1.20.
Wrightsville Hardware Co.:
O. S., Lull & Porter.....75&10&5%
Acme, Lull & Porter.....75&10%
Queen City Reverable.....75&10%
Shepard's Noiseless, Nos. 60, 65, 55 .....75&10%
Niagara, Gravity Locking, Nos. 1, 3 & 5.....75&10&5%
1868, Old Pat'n, Nos. 1, 3 & 5.....75&10&5%
Tip Pat'n, Nos. 1, 3 & 5.....75&10&5%
Buffalo Gravity Locking, Nos. 1, 3 & 5.....75&10&5%
Shepard's Double Locking, Nos. 20 & 25.....70%
Champion Gravity Locking, No. 75.75%
Steamboat Gravity Locking, No. 10.75%
Pioneer, Nos. 060, 45 & 5½.....75%
Empire, Nos. 101 & 103.....70%
W. H. Co.'s Mortise Gravity Locking, No. 2.....60%

Gate Hinges—
Clark's or Shepard's—Doz. sets:

No.	*1*	*2*	*3*
Hinges with L'tches.	$2.00	2.70	5.00
Hinges only	1.40	2.05	3.80
Latches only	.70	.70	.35

New England:
With Latch.....doz. ...@$2.00
Without Latch...doz. ...@$1.60
Reversible Self-Closing:
With Latch.....doz. ...@$1.75
Without Latch...doz. ...@$1.35
Western:
With Latch.....doz. $1.75
Without Latch.....doz. $1.15
Wrightsville Hardware Co.:
Shepard's or Clark's, doz. sets,

Nos.	1	3
Hinges with Latches	$2.00	5.00
Hinges only	1.40	3.80
Latches only	.70	1.35

Pivot Hinges—
Bommer Bros. Pivot.....40%
Lawson Mfg. Co. Matchless.....45%

Spring Hinges—
Holdback, Cast Iron...$6.50@$7.00
Non-Holdback, Cast Iron$6.25@$6.75
J. Bardsley:
Bardsley's Non-Checking Mortise Floor Hinges.....45%
Bardsley's Patent Checking..15%
Bommer Bros.:
Bommer Ball Bearing Floor Hinges 40%
Bommer Spring Hinges.....40%
No. 999 Wrot, Steel Hold Back, ℔ gr. $9.00
Chicago Spring Butt Co.:
Chicago Spring Hinges.....25%
Triple End Spring Hinges..50%
Chicago (Ball Bearing) Floor Hinge 50%
Garden City Engine House....25%
Keene's Saloon Door.....25%
Columbian Hardware Co.:
Acme, Wrought Steel.....30%
Acme, Brass.....25%
American 30%
Columbia, No. 14.....℔ gr. $8.00
Columbia, No. 12.....℔ gr. $25.00
Columbia, Adjustable, No. 1, ℔ gr. $12.00
Gem, new list.....30%
Clover Leaf.....℔ gr. $12.00
Oxford, new list.....30%
Lawson Mfg. Co., Matchless....30%
Richards Mfg. Co.:
Superior Double Acting Floor Hinges 40%
Shelby Spring Hinge Co.:
Buckeye All Steel Holdback Screen Door.....℔ gr. $9.00
Ball Bearing Floor Hinge....50%
Ohio Detachable Screen Door Hinge .....℔ gr. $12.00
The Stover Mfg. Co.:
Ideal, No. 16, Detachable, ℔ gr. $12.50
Ideal, No. 4.....℔ gr. $9.00
New Idea, No. 1.....℔ gr. $9.00
New Idea, Double Acting....45%
New Idea Floor.....45%
Van Wagoner:
Ball Bearing.....25%
No. 777 Sh't Steel Holdb'k..℔ gro. pr.$9
} Extra 10% often given on most of these Hinges.

Wrought Iron Hinges—
Strap and T Hinges, &c., list December 20, 1904:
Light Strap Hinges...70%
H'vy Strap H'g's...75&5%
Light T Hinges...65%
Heavy T Hinges...60%
Extra H'y T H'g's. 70&10%
Hinge Hasps...50%
Cor. Heavy Strap...75&5%
Cor. Ex. Heavy T. 70&10%
Extra 10@10&5%
Screw Hook and Strap. { *6 to 12 in. .lb .3¾¢* ; *1¼ to 20 in. .lb .3½¢* ; *22 to 36 in. .lb .3¼¢*
Screw Hook and Eye:
¾ to 1 inch...lb .6¼¢
⅝-inch...lb .7¼¢
½-inch...lb .8½¢

Hitchers, Stall—
Covert Mfg. Co., Stall Hitchers..30&2%

Hods— Coal—
Per doz.

Inch	*15*	*16*	*17*	*18*
Galv. Open	*$2.50*	*2.75*	*3.00*	*3.25*
Jap. Open	*$1.90*	*2.10*	*2.25*	*2.35*
Galv. Funnel	*$3.00*	*3.30*	*3.60*	*3.90*
Jap. Funnel	*$2.45*	*2.65*	*2.85*	*3.30*

Masons' Etc.—
Cleveland Wire Spring Co.:
Steel Brick, No. 162...each $0.95
Steel Mortar, No. 158...each $1.25

Hoes— Eye—
Scovil and Oval Pattern...60&10@60&10&10%
Grub, list Feb. 23, 1899...70&10@75&10%
D. & H. Scovil...33⅓%

Handled—
NOTE.—Manufacturers are selling from the list of September 1, 1904, but many jobbers are still using list of August 1, 1899, or selling at net prices.
Cronk's Weeding No. 1, $2.00; No. 2, $2.25
Ft. Madison Cotton Hoe...70&10&10%
Ft. Madison Crescent Cultivator Hoe, ℔ doz...70&10%
Ft. Madison Mattock Hoes:
Regular Weight...℔ doz. 66⅔%
Junior Size...℔ doz. $4.00
Ft. Madison Sprouting Hoe...℔ doz. 50%
Ft. Madison Dixie Tobacco Hoe...75&10&7½%
Kretsinger's Cut Easy...70&10%
Warren Hoe...45&10%
W. & C. Ivanhoe...75&2%
B. B. 6 in., Cultivator Hoe...$3.15
B. B., 6½ in...$3.35
Acme Wedding...℔ doz., net, $4.35
W. & C. L'ning Shuffle Hoe, ℔ doz. $4.25

Hoisting Apparatus—
See *Machines, Hoisting.*

Holders— Bit—
Angular, ℔ doz. $24.00...45&10%

Door—
Bardsley's...45%
Empire...50%
Pullman...50%
Superior...33⅓%

File and Tool—
Nicholson File Holders and File Handles...33⅓&10%

Fruit Jar—
Triumph Fruit Jar Holder, ℔ gross, $10.80; ℔ doz...$1.25

Hones—Razor—
Pike Mfg. Co., Belgian, German and Swaty...50%

Hooks—Cast Iron—
Bird Cage, Reading...40%
Bird Cage, Sargent's List...60&10%
Ceiling, Sargent's List, Nos. 29, 32, 33, 129, 132, 133 and 135...50&10&10%
Clothes Line, Reading List...40%
Clothes Line, Sargent's List. 50&20&10%
Coat and Hat, Sargent's List...50&10%
Clothes Line, Stowell's...70%
Coat and Hat, Reading...45&20%
Coat and Hat, Stowell's...70%
Coat and Hat, Wrightsville...65%
Harness, Reading List...40%
Harness, Stowell's...60%
School House, Stowell's...70%

Wire—
Belt...80&10@..%
Wire C. & H. Hooks:...75&10@75&10&10%
Columbian Hdw Co., Gem...70&10%
Parker Wire Goods Co., King..70&10%
Van Wagoner, Coat and Hat...70%
Western W. G. Co. Molding...75%
Wire Goods Co.:
Acme...60&10%
Chief...70%
Crown...75%
Czar...65%
V Brace...75%
Czar Harness...50&10%

Wrought Iron—
Box, 6 in., per doz., $1.00; 8 in., $1.25; 10 in., $2.50.
Cotton...doz. $1.05@$1.25
Wrought Staples, Hooks, &c.—
See Wrought Goods

Miscellaneous—
Hooks, Bench, see Stops, Bench.
Bush, Light, doz. $4.75; Medium, $5.35; Heavy, $6.25
Grass, best, all sizes, per doz. $1.60
Grass, common grades, all sizes, per doz...$1.30
Whiffletree...lb. 5¾@6¢
Hooks and Eyes:
Brass...60&5@60&10&5%
Malleable Iron...70@70&10%
Covert Mfg. Co. Gate and Scuttle Hooks...40%
Covert Saddlery Works' Self Locking Gate and Door Hook...60%
Ft. Madison Cut-Easy Corn Hooks, ℔ doz. $3.25 net
Bench Hooks—See Bench Stops.
Corn Hooks—See Knives, Corn.

Horse Nails—
See *Nails, Horse.*

Horseshoes—
See *Shoes, Horses.*

Hose, Rubber—
Garden Hose, ¾-inch:
Competition...ft. 5 @ 6 ¢
3-ply Guaranteed..ft. 8 @ 9 ¢
4-ply Guaranteed..ft. 10 @11 ¢
Cotton Garden, ¾-in., coupled:
Low Grade...ft. 8 @ 9 ¢
Fair Quality...ft. 10 @11 ¢

Irons— Sad—
From 4 to 10...lb .3 @3½¢
B. B. Sad Irons...lb. 3¼@3½¢
Mrs. Potts', cents per set:

Nos.	*50*	*55*	*60*	*65*
Jap'd Tops	*68*	*65*	*78*	*75*
Tin'd Tops	*71*	*68*	*81*	*78*

New England Pressing. lb. 3¾@4¢

Pinking—
Pinking Irons...doz. 60¢

Irons, Soldering
See *Coppers.*

Jacks, Wagon—
Covert Mfg. Co.:
Auto Screw...30&2%
Steel...45%
Covert's Saddlery Works:
Daisy...60&10%
Victor...60%
Lockport...50%
Lane's Steel...30&10&2%
Richards' Tiger Steel, No. 130...50&10%
Smith & Hemenway Co.'s...25%

Kettles—
Brass, Spun, Plain...20@25%
Enameled and Cast Iron—See Ware, Hollow.

Knives—
Butcher, Kitchen, &c.—
Foster Bros.' Butcher, &c...30%
Wilkinson Shear & Cutlery Co...60%

Corn—
Wilkinson Wilcut Brand Knives and Hooks...60%
Withington Acme, ℔ doz., $2.65; Dent, $2.75; Adj. Serrated, $2.20; Serrated, $2.10; Yankee No. 1, $1.50; Yankee No. 2, $1.15.

Drawing—
Standard List...75@75&10%
C. E. Jennings & Co., Nos. 45, 46...60%
Jennings & Griffin, Nos. 41, 42...60%
Ohio Tool Co.'s...70%
Swan's...75%
Watrous...16⅔%
L. & J. J. White...20&5@25%

Hay and Straw—
Serrated Edge, per doz. $5.75@6.00
Iwan's Sickle Edge...℔ doz. $9.50
Iwan's Serrated...℔ doz. $10.00

Mincing—
Buffalo...℔ gro. $13.00

Miscellaneous—
Farriers'...doz. $3.00@3.25
Wostenholm's...℔ doz. $3.00@3.25

Knobs—
Base, 2½-inch, Birch, or Maple, Rubber Tip...gro. $1.25@$1.50
Carriage, Jap., all sizes...gro. 40@45¢
Door, Mineral...doz. 65@70¢
Door, Por. Jap'd...doz. 70@75¢
Door, Por. Nickel..doz. $2.05@2.15
Bardsley's Wood Door, Shutters, &c. 15%
Picture, Sargent's...60&10&10%

Lacing, Leather—
See *Belting, Leather—*

Ladders, Store, &c.—
Lane's Store...25%
Myers' Noiseless Store Ladders...50%
Richards Mfg. Co.:
Improved Noiseless, No. 112...50%
Climax Shelf, No. 113...50%
Trolley, No. 109...50%

Ladles, Melting—
L. & G. Mfg. Co. (low list)...25%
P. S. & W...50%
Reading...60%
Sargent's...50&10%

Lanterns—Tubular—
Regular Tubular, No. 0...doz. $4.25@4.50
Lift Tubular, No. 0...doz. $4.75@5.00
Hinge Tubular, No. 0...doz. $4.75@5.00
Other Styles...40@40&5%

Bull's Eye Police—
No. 1, 2¾-inch...$2.75@3.00
No. 2, 3-inch...$3.00@3.25

Lasts and Stands, Shoe—
Stowell's Atlas, Malleable Iron...50%
Stowell's Badger, Cast Iron...50%

Latches— Thumb—
Roggin's Latches, with screw...doz. 35@40¢

Door—
Cronk & Carrier Mfg. Co., No. 101.
℔ doz. $2.00
Cronk & Carrier Mfg. Co., Latch, Hasp and Staples...50%
Richards' Bull Dog, Heavy, No. 125...50&5%
Richards' Trump, No. 127...$1.50

Leaders, Cattle—
Small...doz. 50¢; large, 60¢
Covert Mfg. Co.:
Cotton, Hemp and Jute, 45%; Sisal, 33⅓%.

Lifters, Transom—
R. & E...33⅓%

Lines—
Wire Clothes, Nos. 18 19 20
100 feet...$2.25 2.00 1.75
75 feet...$1.75 1.35 1.10
Anniston Waterproof Clothes, 72 ft.
℔ gro., $25.00; Gilt Edge, $23.00; Air Line, $23.00; Acme, $18.00; Alabama, $17.00; Empire, $16.00; Advance, $14.00; Eclipse, $13.50; Chicago, $11.50; Standard, $10.50; Columbia, $9.50; Allston, $13.50; Calhoun, $12.00.
Samson Cordage Works:
Solid Braided Chalk, Nos. 0 to 3..40%
Silver Lake Braided Chalk, No. 0, $6.00; No. 1, $6.50; No. 2, $7.00; No. 3, $7.50...℔ gr. 20%
Masons' Lines, Shade Cord, &c.:
White Cotton, No. 3½, $1.50; No. 4, $2.00; No. 4½, $2.50; Colors, No. 3½, $1.75; No. 4, $2.25; No. 4½, $2.75; Linen, No. 3½, $2.50; No. 4, $3.50; No. 4½, $4.50...20%
Tent and Awning Lines: No. 5, White Cotton, $7.50; Drab Cotton, $8.50...20%
Clothes Lines, White Cotton: 50 ft., $2.75; 60 ft., $3.25; 70 ft., $3.75; 75 ft., $4.00; 80 ft., $4.25; 90 ft., $4.75; 100 ft., $5.25...20%

Locks— Cabinet—
Cabinet Locks...33⅓@33⅓&7½%

Door Locks, Latches, &c.—
NOTE.—Net Prices are very often made on these goods.
Reading Hardware Co...40%
R. & E. Mfg. Co...40%
Sargent & Co...40&10%
Stowell's Steel Door Latches...50%

Elevator—
Stowell's...50%

Padlocks—
Wrought Iron...75&10&5@80&5%
Net prices are general.
R. & E. Mfg. Co. Wrought Steel and Brass...75&10%

Sash, &c.—
Ives' Patent:
Bronze and Brass...62½%
Crescent...50&10%
Iron...62½%
Window Ventilating...60%
Robison Patent Ventilating Sash Lock...40%
Wrought Bronze and Brass...55%
Wrought Steel...55%
Pullman Patent Ventilating Lock...25%
Reading...40%

Machines—Boring—
Com. Upr't, without Augers. $2.00
Com. Ang'l'r, without Augers. $2.25
Swan's Improved...40&10%
Angular
Jennings', Nos. 1 and 4...35&5%
Millers' Falls...5.75
Snell's, Rice's Pat. 2.50 2.75

Corking—
Reisinger Invincible Hand Power...℔ doz. $18.00

Fence—
Williams' Fence Machines...each, $5.50

Hoisting—
Moore's Anti-Friction Differential Pulley Block...30%
Moore's Hand Hoist, with Lock Brake...20%

Ice Cutting—
Chandler's...12½%

Washing—
Boss Washing Machine Co.: Per doz.
Boss No. 1...$57.00
Boss Rotary...54.00
Champion Rotary Banner No. 1...$54.00
Standard Champion No. 1...$48.00
Standard Perfection...$36.00
Cinti Squaze Western...$30.00
Uneeda American, Round...$30.00

Mallets—
Hickory...45&5@50%
Lignumvitæ...45&5@50%
Tinners' Hickory and Applewood...doz. 45&5@50%

Mangers, Stable—
Swett Iron Works...50%

Mashers, Vegetable—
Western, W. G. Co., Potato...60&10%

Mats, Door—
Elastic Steel (W. G. Co.), new list...50&10%
Keystone Wire Matting Co.:
Keystone...50%
Ideal...50%

Mattocks—
See *Picks and Mattocks.*

Milk Cans—See *Cans, Milk.*

Mills, Coffee, &c.—
Enterprise Mfg. Co...25@30%
National list Jan. 1, 1902...30%
Parker's Columbia & Victoria. 50&10@60%
Parker's Box and Side...50&10@60%
Swift, Lane Bros. Co...30%

Mowers, Lawn—
NOTE.—Net prices are generally quoted
Cheapest...all sizes, $1.85@2.00
Cheap...all sizes, $2.00@2.50
Better Grade..all sizes, $2.50@4.50

	12	*14*	*16*	*18-in.*
High Grade	*$4.50*	*4.75*	*5.00*	*5.25*

Continental...60&5%
Great American...70%
Great American Ball B'r'g, new list. 70%
Quaker City...70%
Pennsylvania...60&5%
Pennsylvania, Jr., Ball Bearing...60%
Pennsylvania Golf...50%
Pennsylvania Horse...33⅓&5%
Pennsylvania Pony...40&5%
Granite State:
Style A, Low Wheel...70&10&10&5%
Style B, Low Wheel...70&10&5%
Style C, High Wheel...70&10%
Style D, High Wheel...70%
Philadelphia:
Styles M., S., C., K., T...70&5%
Style A, all Steel...60&5%
Style E, High Wheel...70&10&5%
Drexel and Gold Coin, special list. 50%

Nails—
Wire Nails and Brads, Papered, List July 20, 1899..85&5@85&10%
Cut and Wire. See *Trade Report.*
Hungarian, Finishing, Upholsterers' &c. See *Tacks.*

Horse—

Nos.	*6*	*7*	*8*	*9*	*10*	
Anchor	23	21	20	19	18	...40&5%
Champlain	23	26	25	24	23	...50%
Coleman	13	13	13	13	13	...net
New Haven	23	21	20	19	18	...40&5%
Putnam	23	21	20	19	18	...33⅓%
New Putnam	19	18	17	16	16	...10&10%
Western						...℔ lb 8½¢

Jobbers' Special Brands...per lb .9@10¢

Picture—

	1½	*2*	*2½*	*3*	*3½ in.*
Brass H'd.	*.45*	*.55*	*.60*	*.70*	*.. gro*
Por. Head...	*1.10*	*1.10*	*1.10*		*.. gro*

Nippers—
See *Pliers and Nippers.*

Nuts—
Cold Punched: Off list.
Mfrs. or U. S. Standard.
Square, Blank or Tapped..$4.90
Hexagon, Blank or Tapped. $5.30
Square, Blank, C. & T...$5.20
Hexagon, Blank, C. & T...$5.90
Hot Pressed:
Mfrs., U. S. or Nar. Gauge Stan'd.
Square, Blank...$5.30
Hexagon, Blank...$5.20
Square, Tapped...$5.20
Hexagon, Tapped...$5.70

Oakum—
Best...lb. 6¼@6½¢
U. S. Navy...lb. 5¾@6¢
Navy...lb. 4½@5¢
Plumbers' Spun Oakum...2½@3¢
In carload lots ½¢ lb. off, f.o.b. New York.

Oil Tanks—See *Tanks, Oil.*

Oilers—
Brass and Copper...50&10%
Tin or Steel...70@70&5%
Zinc...70@70&5%
Chase or Paragon:
Brass and Copper...50&10%
Tin or Steel...65&10%
Zinc...65&10%
Malleable, Hammers' Imp'ed, Nos. 11, 12 and 13...20%
Malleable, Hammers' Old Pattern, Nos. 1, 2 and 3...50%
American Tube & Stamping Co.:
Spring Bottom Cans...70@70&10%
Railroad Oilers, &c...60@60&10%

Openers— Can— *Per doz.*
Sprague, Iron Handle...30@35¢
Sprague, Wood Handle...35@40¢
Sardine Scissors...$1.75@$3.00
National...50&10%
Stowell's Sprague...℔ doz. 35@45¢
Vim Tin Shear and Can Opener, ℔ doz., 75c.; per gro., $7.50

Egg—
Nickel Plate...℔ doz., $2.00
Silver Plate...℔ doz., $4.00

Packing—
Asbestos Packing, Wick and Rope...17@22¢

Rubber—
(Fair quality goods.)
Sheet, C. I...11@12¢
Sheet, C. O. S...11@12¢
Sheet, C. B. S...12@13¢
Sheet, Pure Gum...40@45¢
Sheet, Red...40@50¢
Jenkins' '96, ℔ lb 80¢...25@25&5%

Miscellaneous—
American Packing...lb. 7@10 ¢
Cotton Packing...lb. 16@25 ¢
Italian Packing...lb. 9@12½¢
Jute...lb. 4@ 4½¢
Russia Packing...lb. 8@11 ¢

Pails, Creamery—
R. M. Co., with gauges—No. 1, $6.25; No. 2, $6.50 ℔ doz.

Pails, Water, Well, &c.—
See *Buckets.*

Pans— Dripping—
Standard List...65&10%

Fry—
Common Lipped:

Nos.	*1*	*2*	*3*	*4*	*5*
Per doz.	*$0.75*	*0.80*	*0.90*	*1.10*	*1.30*

Refrigerator, Galva.—

Inch	*12*	*14*	*16*	*18*
Per doz.	*$1.95*	*2.25*	*2.80*	*3.15*

Roasting and Baking—
Regal, R. M. Co., ℔ doz., Nos. 5, $4.50; 10, $5.25; 20, $5.75; 30, $6.25.
Savory, ℔ doz., net, Nos. 200, $9.00; 400, $15.00.
Simplex, ℔ gro.:

No.	40	50	60	140	150	160
	$30.00	35.00	42.00	34.00	39.00	46.00

Paper—Building Paper

Asbestos:	*lb.*	
Roll Board or Building Felt, 6 to 30 lb., per 100 sq. ft.	*6¢*	1-32
Roll Board or Building Felt, 3-32 and ⅛ in., 45 to 60 lbs., per 100 sq. ft.	*8¢*	3-32
Mill Board, Sheet, 40 x 40 in., 1-32 to ⅛ in.	*10¢*	⅛

Per roll
Rosin Sized Sheathing: 500 sq. ft. Light weight, 25 lbs. to roll...$3@3½¢
Medium weight, 30 lbs. to roll, 40@45¢
Heavy weight, 40 lbs. to roll..
56@60¢
Black Water Proof Sheathing, 500 sq. ft., 1 ply, 65¢; 2 ply, 85¢; 3 ply, $1.10; 4 ply, $1.25.
Deafening Felt, 2, 6 and 4½ sq. ft. to lb. ton...$48.00
Red Rope Roofing, 250 sq. ft. per roll...$1.75

Tarred Paper—
1 ply (roll 500 sq. ft.), ton...$32.50@35.50
2 ply, roll 108 sq. ft...55¢
3 ply, roll 108 sq. ft...75¢
Slater's Felt (roll 500 sq. ft.). 70¢
R. R. M. Stone Surfaced Roofing (roll 110 sq. ft.)...$2.75

Sand and Emery—
Flint Paper and Cloth. 60@60&10%
Garnet Paper and Cloth...25%
Emery Paper and Cl'h. 60@60&10%

Parers—Apple—

Advance ..... ℔ doz. $4.00
Baldwin ..... ℔ doz. $4.00
Bonanza Improved ..... each $6.50
Daisy ..... ℔ doz. $4.00
Dandy ..... each $7.50
Eureka Improved ..... each $20.00
Family Bay State ..... ℔ doz. $15.00
Improved Bay State ..... ℔ doz. $36.00
Little Star ..... ℔ doz. $5.00
New Lightning ..... ℔ doz. $7.00
Reading 72 ..... ℔ doz. $3.25
Reading 75 ..... ℔ doz. $6.25
Rocking Table ..... ℔ doz. $6.20
Turn Table '98 ..... ℔ doz. $6.00
White Mountain ..... ℔ doz. $5.00

Potato—

Saratoga ..... ℔ doz. $7.00
White Mountain ..... ℔ doz. $6.00

Picks and Mattocks—

List Feb. 23, 1899 ..... 75%
Cronk's Handled Garden Mattock, ℔ doz., $6.40 ..... 33⅓%

Pinking Irons—

See *Irons, Pinking.*

Pins, Escutcheon—

Brass ..... 60@60&10%
Iron, list Nov. 11, '85 .. 60@60&10%

Pipe, Cast Iron Soil—

Carload lots.
Standard, 2-6 in. 50&10@50&10&5%
Extra Heavy, 2-6 in. ..... 65&10%
Fittings ..... 70&10@70&10&5%

Pipe, Merchant—

Consumers, Carloads.

	Steel.		*Iron.*	
	Blk.	*Galv.*	*Blk.*	*Galv.*
⅛ & ¼ in.	71%	55%	63%	52 %
⅜ in.	73%	59%	70%	56 %
½ in.	75%	63%	72½	60 %
¾ to 6 in.	79%	69%	76½%	66½%
7 to 12 in.	74%	59%	71½%	56 %

Pipe, Vitrified Sewer—

Carload lots.
Standard Pipe and Fittings, 2 to 24 in.:
New England 68%
New York and New Jersey .. 71%
Maryland, Delaware, E. Pa. 75%
West. Pa. and West Va. 77%
Virginia 76%
Ohio, Michigan and Ky. 77%
Indiana 77%
NOTE.—Carload lots are generally delivered.

Pipe, Stove—

Edwards' Nested Stove Pipe:

	C. L.	L. C. L.
5 in., per 100 joints	$7.00	$8.00
6 in., per 100 joints	7.50	8.50
7 in., per 100 joints	8.50	9.50

Planes and Plane Irons—Wood Planes—

Bench, first qual. ..... 40&10%
Bench, Second qual. ..... 50&10%
Molding ..... 33⅓&10%
Bailey's (Stanley R. & L. Co.) 40%
Chapin-Stephens Co.:
Bench, First Quality ..... 40@40&10%
Bench, Second Quality .... 50@50&10%
Molding ..... 33⅓@33⅓&10%
Toy and German ..... 40@40&10%
Chaplin's 60%
Ohio Tool Co.:
Bench, First Quality ..... 40@40&10%
Bench, Second Quality .... 50@50&10%
Molding ..... 33⅓@33⅓&10%
Adjustable Wood Bottom 60%
Union 60%

Iron Planes—

Bailey's (Stanley R. & L. Co.) 40%
Chaplin's Iron Planes ..... 50&10%
Miscellaneous Planes (Stanley R. & L. Co.) 35%
Ohio Tool Co.'s Iron Planes 60%
Sargent's ..... 60&10%
Union 60%

Plane Irons—

Wood Bench Plane Irons ..... 25&10@30%
Buck Bros. 30%
Chapin-Stephens Co. ..... 30@30&10%
Ohio Tool Co. 30%
Stanley R. & L. Co. 35%
Union 50%
L. & I. J. White ..... 20&5@25%

Planters, Corn, Hand—

Kohler's Eclipse ..... ℔ doz. $8.50

Plates—

Fellow ..... lb. ¼@4¼¢
Self-Sealing Pie Plates (R. M. Co.). ℔ doz. $2.00 ..... 50%

Pliers and Nippers—

Button Pliers .... 75&10@75, 10, 5%
Gas Burner, per doz., 5 in., $1.25 @ $1.30; 6 in., $1.45 @ $1.50.

Gas Pipe..	*7*	*8*	*10*	*12-in.*
	$2.00	$2.25	$3.00	$3.75

Acme Nippers ..... 50&5%
Cronk & Carrier Mfg. Co.:
American Button ..... 75&10%
Cronk's 60%
Stub's Pattern 50%
Combination and others 33⅓%
Heller's Farriers' Nippers, Pincers and Tools ..... 40&10@40&10&10%
The Nettleton Mfg. Co. Reversible Cutting Nippers 40%
P., S. & W. Tinners' Cutting Nippers 40%
Wm. Schollhorn Co.:
Bernard 33⅓%
Elm City 33⅓%
Lodi 50%
Paragon 50%
Swedish Side, End and Diagonal Cutting Pliers 50%
Utica Drop Forge & Tool Co.:
Pliers and Nippers, all kinds 40%

Plumbs and Levels—

Chapin-Stephens Co.:
Plumbs and Levels ..... 30@30&10&10%
Chapin's Imp. Brass Cor. 40@40&10&10%
Pocket Levels ..... 30@30&10&10%
Disston's Plumbs and Levels 70%
Disston's Pocket Levels 70%
C. E. Jennings & Co.'s Iron 33⅓%
C. E. Jennings & Co.'s Iron, Adjustable ..... 40&7½%
Stanley R. & L. Co. 45%
Stanley's Duplex 35%
Woods' Extension 33⅓%

Poachers, Egg—

Buffalo Steam Egg Poachers, ℔ doz., No. 1, $6.00; No. 2, $9.00; No. 3, $9.00; No. 4, $12.00 ..... 50%

Points, Glaziers'—

Bulk and 1-lb. papers, ... lb. 10¢
½-lb. papers ..... lb. 9@10½¢
¼-lb. papers ..... lb. 9¾@11¢

Pokes, Animal—

Ft. Madison Hawkeye ..... ℔ doz. $3.25
Ft. Madison Western ..... ℔ doz. $4.00

Police Goods—

Manufacturers' Lists ... 25@25&5%
Tower's 25%

Polish—Metal, Etc—

Glasbrite, No. 2, 5 lb can (powder), each, $1.25; ℔ doz., $12.00; No. 2, 10 lb can (cake), each, $2.50; ℔ doz., $24.00.
Prestoline Liquid, No. 1 (½ pt.), ℔ doz., $3.00; No. 2 (1 qu.), $9.72 .... 40%
Prestoline Paste 40%
George William Hoffman:
U. S. Metal Polish Paste, 3 oz. boxes, ℔ doz. 50¢; ℔ gro. $4.50; ½ lb boxes, ℔ doz. $1.25; 1 lb boxes, ℔ doz. $2.25.
U. S. Liquid, 8 oz. cans, ℔ doz., $1.25; ℔ gro., $12.00.
Barkeepers' Friend Metal Polish, ℔ doz., $1.75; ℔ gro., $18.00.
Wynn's White Silk, ½ pt. cans, ℔ doz. $2.00

Stove—

Black Eagle Benzine Paste, 5 lb cans, ℔ lb 10¢
Black Eagle, Liquid, ½ pt. cans.. ℔ doz. 75¢
Black Jack Paste, ¾ lb cans, ℔ gr. $9.00
Black Kid Paste, 5 lb can.... each. $0.65
Ladd's Black Beauty Liquid, per 100 tins $6.75
Joseph Dixon's, ℔ gr. $5.75 ..... 10%
Dixon's Plumbago ..... ℔ lb 8¢
Fireside ..... ℔ gr. $2.50
Gem, ℔ gr. $4.50 ..... 10%
Japanese ..... ℔ gr. $3.50
Jet Black ..... ℔ gr. $3.50
Peerless Iron Enamel, 10 oz. cans.. ℔ doz. $1.50
Wynn's:
Black Silk, 5 lb pail ..... each 70¢
Black Silk, ½ lb box ..... ℔ doz. $1.00
Black Silk, 5 oz. box ..... ℔ doz. $0.75
Black Silk, ½ pt. liq. ..... ℔ doz. $1.00

Poppers, Corn—

1 qt., Square ..... gro. $9.00
1 qt., Round ..... gro. $10.00
1½ qt., Square ..... gro. $11.00
2 qt., Square ..... gro. $13.00

Post Hole and Tree Augers and Diggers—

See also *Diggers, Post Hole, &c.*

Posts, Steel—

Steel Fence Post, each, 5 ft., 42¢; 6 ft., 46¢; 6½ ft., 48¢.
Steel Hitching Posts ..... each $1.30

Potato Parers—

See *Parers, Potato.*

Pots, Glue—

Enameled 40%
Tinned 35%

Powder—

In Canisters:
Duck, 1 lb ..... each 45¢
Fine Sporting, 1 lb .... each 75¢
Rifle, ½-lb ..... each 15¢
Rifle, 1-lb ..... each 25¢
In Kegs:
12½-lb. kegs $3.50
25-lb. kegs $4.50
King's Semi-Smokeless:
Keg (25 lb bulk) $6.50
Half Keg (12½ lb bulk) $3.50
Quarter Keg (6¼ lb bulk) $1.90
Case 24 (1 lb cans bulk) $8.50
Half case (1 lb cans bulk) $4.50
King's Smokeless: Shot Gun. Rifle.
Keg (25 lb bulk) $12.00 $15.00
Half Keg (12½ lb bulk) ... 6.25 7.75
Quarter Keg (6¼ lb bulk) .. 3.25 4.00
Case 24 (1 lb cans bulk) .. 14.00 17.00
Half case 12 (1 lb c. bk) .. 7.25 8.75
Robin Hood Sm'less Shot Gun .. 50&5%

Presses—

Fruit and Jelly—

Enterprise Mfg. Co. ..... 20@25%

Seal Presses—

Morrill's No. 1, ℔ doz., $20.00 ..... 50%

Pruning Hooks and Shears

See *Shears.*

Pullers, Cork—

Invincible Cork Puller $21.00

Pullers, Nail—

Cyclops 50%
Miller's Falls, No. 3, ℔ doz., $12.00.. ..... 33⅓&10%
Morrill's No. 1, Nail Puller, ℔ doz. $20.00 ..... 50%
Pearson No. 1, Cyclone Spike Puller, each $30.00 ..... 50%
Scranton, Case Lots:
No. 2B (large) $5.50
No. 3B (small) $5.00
Smith & Hemenway Co.:
Diamond B, No. 2, case lots.. ℔ doz. $6.00
Diamond B, No. 3, case lots.. ℔ doz. $5.50
Giant No. 1, ℔ doz. $18; No. 2, $16.50; No. 3, $15 ..... 33⅓%
Staple Pullers 60%
Parrot Tack and Stub Puller, ℔ doz., 75c.; ℔ gro., $6.00

Pulleys, Single Wheel—

Inch	*1½*	*1¾*	*2*	*3*
Awning or Tackle, doz.	$0.30	.45	.60	1.05
Hay Fork, Swivel or Solid Eye. doz., ¼ in., $1.25; 5 in., $1.55				
Inch	*2*	*2¼*	*2½*	
Hot House, doz.	$0.65	.85	1.20	
Inch	*1¼*	*1½*	*1¾*	*2*
Screw, doz.	$0.16	.19	.23	.30
Inch	*1¾*	*2*	*2¼*	*2½*
Side, doz.	$0.25	.40	.55	.60
Inch	*1½*	*1¾*	*2*	*2½*

Stowell's:
Ceiling or End, Anti-Friction .. 60&10%
Dumb Waiter, Anti-Friction .. 60&10%
Electric Light 60%
Side, Anti-Friction ..... 60&10%

Sash Pulleys—

Common Frame; Square or Round End, per doz, 1¾ and 2 in ..... 16@19¢
Auger Mortise, no Face Plate, per doz., 1¾ and 2 in. .. 16@19¢
Acme ..... 1¾ in., 16¢; 2 in., 19¢
Fox-All-Steel, Nos. 3 and 7, 2 in.... ℔ doz. 50%
Grand Rapids All Steel Noiseless .. 50%
Ideal ..... 70&10%
Niagara ..... 1¾ in., 16¢; 2 in., 19¢
No. 26, Troy .. 1¾ in., 14½¢; 2 in., 16½¢
Star ..... 1¾ in., 16¢; 2 in., 19¢
Tackle Blocks—See Blocks.

Pumps—

Cistern ..... 60@60&10%
Pitcher Spout ..... 80@80&10%
Wood Pumps, Tubing, &c. .. 45@50%
Barnes Dbl. Acting (low list) 50%
Barnes' Pitcher Spout ..... 75&10&5%
Contractors' Rubber Diaphragm No. 2, B. & L. Block Co. $16.00
Daisy Spray Pump ..... ℔ doz. $6.75
Flint & Walling's, Fast Mail Hand, (low list) 55%
Flint & Walling's Fast Mail (low list) ..... 55&5%
Flint & Walling's Tight Top Pitcher .. 80%
National Specialty Mfg. Co., Measuring, $6.00 ..... 30%
Mechanical Sprayer $6.00
Myers' Pumps (low list) 50%
Myers' Power Pumps 50%
Myers' Spray Pumps ..... 50&10%

Pump Leathers—

Plunger and Lower Valve—Per gro.:

Inch...	*2*	*2¼*	*2½*	*2¾*
	$2.20	2.50	2.75	3.00
Inch...	*3*	*3¼*	*3½*	*3¾*	*4*
	$3.30	3.60	3.85	4.10	4.40

Plunger Cup Leathers—Per 100:

Inch...	*2½*	*3*	*3½*	*4*
	$2.75	3.85	5.00	6.00

Punches—

Saddlers' or Drive, good ..... doz. 50@75¢
Spring, single tube, good quality ..... $1.75@2.00
Revolving (4 tubes) ..... doz. $3.50@3.75
Bemis & Call Co.'s Cast St'l Drive .. 50%
Bemis & Call Co.'s Check 55%
Morrill's Nos. 1AA, 1A, 1B, 1C, $15.00 ..... 50%
Hercules, 1 die, each $5.00 ..... 50%
Niagara Hollow Punches 40%
Niagara Solid Punches ..... 55&10%
Wm. Schollhorn Co.:
Bernard 33⅓%
Lodi 50%
Paragon 50%
Steel Screw, B. & K. Mfg. Co. 50%
Tinners' Hollow, P., S. & W. Co. .. 40%
Tinners' Solid, P., S. & W. Co., ℔ doz., $1.44 ..... 60%

Rail—Barn Door, &c.—

Sliding Door, Painted Iron .... 2½@2¾¢
Sliding Door, Wrought Brass, 1⅛ in., lb., 36¢ 30%
Allith Mfg. Co.:
No. 1, Reliable Hgr. Track, ℔ ft. 5½¢
No. 2, Reliable Hgr. Track, ℔ ft. 7¢
Cronk's:
Double Braced Steel Rail .. ℔ ft. 2¾¢
O. N. T. Rail ..... 2½¢
Griffin's:
xxx, ℔ 100 ft., 1 x 3-16 in., $3.00; 1¼ x 3-16 in., 3.50.
Hinged Hanger, ℔ 100 ft. 1 x 3-16 in., $3.10; 1¼ x 3-16 in., $3.60.
Lane's:
Hinged Track, ℔ 100 ft., 1 in., $3.40; 1¼ in., $4.10.
O. N. T., ℔ 100 ft., 1 in., $2.75; 1¼ in., $3.50; 1½ in., $4.00.
Standard, 1¼ in. ..... ℔ 100 ft. $4.00
Lawrence Bros.:
℔ 100 ft. No. 201, $4.00; No. 202, $4.00
New York, 1 x 3-16 in., ℔ 100 ft. $2.75
McKinney's:
Hinged Hanger Rail, ℔ ft., 11¢ .. 50%
None Better ..... ℔ ft. 3¾¢
Standard ..... ℔ ft. 4 ¢
Myers' Stayon Track ..... 60&10%
Richards' Mfg. Co.:
Common, 1 x 3-6 in., $3.00; 1¼ x 3-16, $3.25; 1¼ x 3-16, $3.50.
Special Hinged Hanger Rail .. 60&10%
Lag Screw Rail, No. 65 ..... 50%
Gauge Trolley Track, ℔ ft., No. 31, 9¢; No. 32, 14¢; No. 33, 20¢.
No. 50 ..... 60&10%
Nos. 61, $3.00; 62, $3.25; 63, $3.50; 64, $4.00; 45, $3.25; 46, $3.50; 49, No. 1, $3.25; 49, No. 2, $3.50.
Safety Door Hanger Co.'s Storm King Safety 60%
Safety Door Hanger Co.'s U. S. Standard 60%
Stowell's:
Cast Rail ..... ℔ ft. 1¾¢
Steel Rail, Plain 25%
Wrought Bracket, 1 3-16 in.... ℔ ft. 3¢
Wrought Bracket, 1½ x 5-16.. ℔ ft. 7¢
Swett's Hylo, ℔ ft. 11¢ 60%
P. L. R. Steel Rail ..... ℔ 100 ft. $3.00
No. 0, 1 x 3-16 ..... ℔ 100 ft. $2.75

Rakes—

NOTE.—Many goods are sold at net prices.
Fort Madison Red Head Lawn $3.25
Fort Madison Blue Head Lawn $2.70
Jackson Lawn, 29 and 30 teeth, ℔ doz., net $4.25
Cronk's:
New Champion Garden, ℔ doz., 12 teeth, $15.00; 14, $16.50; 16, $18.00 .. 75%
Victor Garden, ℔ doz., 12 teeth, $15.00; 14, $16.50; 16, $18.00 ..... 60%
Queen City Lawn, ℔ doz., 20 teeth, $3.45; 24, $3.60 ..... net.
Anticlog Lawn, ℔ doz. $4.00
Malleable Garden ..... 70&10%
Kohler's:
Lawn Queen, 20-tooth ..... ℔ doz. $3.45
Lawn Queen, 24-tooth ..... ℔ doz. $3.60
Paragon, 20-tooth ..... ℔ doz. $2.75
Paragon, 24-tooth ..... ℔ doz. $3.00
Steel Garden, 14-tooth .... ℔ doz. $2.40
Malleable Garden, 14-tooth, ℔ doz. $1.75@2.00
Weldless Steel Garden ..... 75&5%

Rasps, Horse—

Disston's 75%
Heller Bros. ..... 70&5@70&10&5%
McCaffrey's American St'd .. 60&10&5%
New Nicholson ..... 70&10@75%
See also Files.

Razors—

Boras—I C. 60%
Fox Razors, No. 42.. ℔ doz. $20.00
Fox Razors, No. 44.. ℔ doz. $20.00
Fox Razors, No. 82, Platina... ℔ doz. $25.00
} Dis 40%
Red Devil 50%
Silberstein:
Carbo Magnetic $18.00
Griffon, No. 65 ..... $15.00
Griffon, No. 60 ..... $12.00
All other Razors 40%

Safety Razors—

Kampfe Bros.:
Star Safety 25%
Star Interchangeable 25%
Star Safety Corn 25%
Silberstein 40%

Reels, Fishing—

Hendryx:
M 6, Q 6, A 6, B 6, M 9¼, M 16, Q 16, A 16, B 16, 4008, Rubber, Populo, Nickeled Populo 20%
Aluminum, German Silv., Bronze. 25%
1240 N, 124 N 20%
3004 N, 06 N, 6 RM, G 9 ..... 25%
4 N, 6 PN, 24 N, 26 PN 20%
2904 P 33⅓%
2904 PN 33⅓%
0924 N 33⅓%
02084 N 33⅓%
002904 PN 33⅓%
802 N 33⅓%
986 PN, 2904 N, 974 PN 25%
5009 PN, 5009 N 20%
Competitor, 102 P, 102 PN, 202 P, 202 PN, 102 PR, 202 PR 20%
304 P, 304 PN, 00304 P, 00304 PN .. 33⅓%

Registers—*List July 1, 1903.*

Japanned, Electroplated and Bronzed ..... 70&10%

Revolvers—

Single Action ..... 95¢@$1.00
Double Action, except ⅓ cal. .. $1.85
Double Action, ⅓ caliber $2.00
Automatic $3.45
Hammerless $4.00

Riddles, Hardware Grade

16 in. ..... *per doz.* $2.50@$2.75
17 in. ..... *per doz.* $2.75@$3.00
18 in. ..... *per doz.* $3.00@$3.25

Rings and Ringers—Bull Rings—

	2	*2½*	*3 inch.*
Steel	$0.70	0.75	0.80 *doz.*
Copper	$1.00	1.15	1.40 *doz.*

Rea's Improved Self-Piercing, Copper, 2 in., ℔ doz., $1.25; 2½ in., $1.50; 3 in., $1.75.

Hog Rings and Ringers—

Hill's Rings, gro. boxes .. $4.00@4.50
Hill's Ringers, Gray Iron ..... *doz.* 50@55¢
Hill's Ringers, Malleable Iron .. *doz.* 70@75¢
Blair's Rings ... *per gro.* $4.75@5.25
Blair's Ringers, per doz. $0.60@ .65
Brown's Rings .. *per gro.* $5.00@5.50
Brown's Ringers, per doz. $0.60@ .65

Rivets and Burrs—

Copper ..... 40&10@45%
Iron or Steel ..... 75@75&65%

Bifurcated and Tubular—

Assorted in Boxes.
Bifurcated, per doz. boxes, pasteboard boxes, 23@25¢; Tin boxes, 29@32¢.
Tubular, per doz. boxes, 50 count, 29@32¢; 100 count, 51@58¢.

Rollers—

Acme, Stowell's Anti-Friction 50%
Barn Door, Sargent's list 60%
Cronk's Stay No. 65, $0.90; No. 50 ..... $1.00
Cronk's Brinkerhoff No. 55, $0.60; No. 56 ..... $0.84
Lane's Stay 40%
Richards' Stay:
Handy Adj. and Reversible No. 53 .. 75¢
O. K. Adj. and Reversible No. 58 .. 50¢
Lag Screw, Nos. 55 and 57 ..... 50%
Underwriters', Nos. 59, 60 ..... 50%
Favorite, No. 54 ..... 60%
Stowell's Barn Door Stay .. ℔ doz. $1.00
Swett's Anti-Friction 50%
Screw and Spike Stay ..... ℔ doz. 65¢
Hinge Adjustable Stay ..... ℔ doz. 90¢

Rope—

Manila, 7-16 in. diam. and larger: Pure ..... lb., 12½¢
Sisal, 7-16 in. diam. and larger: Pure ..... lb., 10¢
Sisal, 7-16 in. diam. and larger: No. 2 quality ..... lb., 8¢
Sisal, Hay, Hide and Bale Ropes, Medium and Coarse: Mixed ..... lb., 8¢
Pure ..... lb. 10¢
Sisal, Tarred, Medium Lath Yarn, Coarse and Untarred: Mixed ..... lb. 8¢
Pure ..... lb. 10¢
Cotton Rope: Best, ¼-in. and larger. 16½@18¢
Medium, ¼-in. and larger. 15½@16½¢
Common, ¼-in. and larger. . 10¢
In coils, ½¢ advance.
Jute Rope: Thread No. 1, ¼-in. & up, lb. 6½¢
Thread No. 2, ¼-in. & up, lb. 5½¢
Old Colony Manila Transmission Rope ..... ℔ lb 17½¢

Wire Rope—

Galvanized ..... 57½&2½%
Plain ..... 45&2½%

Ropes, Hammock—

Covert Mfg. Co.:

Jute 45%
Sisal ..... 33⅓&5%
Covert Saddlery Works..... 60&5%

Rulers, Desk—

Stimpson & Son:
Boxwood and Maple..... 30&10%

Rules

Boxwood ..... 60&10&10%
Ivory ..... 35&10@35&10&5%
Chapin-Stephens Co.:
Boxwood ..... 60@60&10%
Flexifold ..... 27½&10&10&2½%
Ivory ..... 35@35&10&10%
Miscellaneous ..... 50@50&10&10%
Combination ..... 55@55&10%
Stationers' ..... 10@10&10%
Keuffel & Esser Co.:
Folding, Wood..... 35&10%
Folding, Steel..... 33⅓&10%
Lufkin's Steel..... 50&10%
Lufkin's Lumber..... 60%
Stanley R. & L. Co.:
Boxwood 62½%
Ivory 45%
Miscellaneous 60%
Zig Zag..... 40%
Zig Zag, Pin Joint..... 42½%
Upson Nut Co.:
Boxwood ..... 60@60&10%
Ivory ..... 35&10@35&10&10%

Sash Balances—
See *Balance, Sash.*

Sash Locks—
See *Locks, Sash.*

Sash Weights—
See *Weights, Sash.*

Sausage Stuffers or Fillers
See *Stuffers or Fillers, Sausage.*

Saw Frames—
See *Frames, Saw.*

Saw Sets—See *Sets, Saw.*

Saw Tools—See *Tools, Saw.*

Saws—

Atkins':
Circular 50%
Band ..... 50&10&60%
Cross Cuts..... 35&5%
Mulay, Mill and Drag..... 50%
One-Man Saw..... 40%
Wood Saws..... 40%
Hand, Compass, &c..... 40%
Chapin-Stephens Co.:
Turning Saws and Frames..30@30&10%
Diamond Saw & Stamping Works:
Sterling Kitchen Saws.....30&10&10%
Disston's:
Circular, Solid and Ins'ted Tooth..50%
Band, 2 to 14 in. wide..... 60%
Band, ⅜ to 1¼..... 60%
Crosscuts 50%
Narrow Crosscuts..... 55%
Mulay, Mill and Drag..... 50%
Framed Woodsaws..... 35%
Woodsaw Blades..... 35%
Woodsaw Rods..... 25%
Hand Saws, Nos. 12, 99, 9, 16, d100, D8, 120, 76, 77, 8..... 25%
Hand Saws, Nos. 7, 107, 107½, 3, 1, 0, 00, Combination..... 30%
Compass, Key Hole, &c..... 25%
Butcher Saws and Blades..... 35%
C. E. Jennings & Co.'s:
Back Saws..... 25%
Butcher Saws..... 30%
Compass and Key Hole Saws..35&5%
Framed Wood Saws..... 30%
Hand Saws..... 20&2½%
Wood Saw Blades..... 35%
Millers Falls:
Butcher Saws..... 15&10%
Star Saw Blades..... 15&10%
Peace & Richardson's Hand Saws...30%
Simonds':
Circular Saws..... 50%
Crescent Ground Cross Cut Saws..35%
One-Man Cross Cuts..... 40&10%
Gang Mill, Mulay and Drag Saws.50%
Band Saws..... 50%
Back Saws..... 25@25&7½%
Butcher Saws..... 35@35&7½%
Hand Saws..... 25@25&7½%
Hand Saws, Bay State Brand..... 45%
Compass, Key Hole, &c..25@25&7½%
Wood Saws..... 35@35&7½%
Springfield Mach. Screw Co.:
Diamond Kitchen Saws....40&10@50%
Butcher Saws Blades..... 35&40%
Wheeler, Madden & Clemson Mfg. Co.'s Cross Cut Saws..... 50%

Hack Saws—

Atkins' Hack Saw Blades A A A..25%
Disston's:
Concave Blades..... 25%
Keystone 40%
Hack Saw Frames..... 30%
Fitchburg File Works, The Best...35%
C. E. Jennings & Co.'s:
Hack Saw Frames, Nos. 175, 180..... 40&7½%
Hack Saws, Nos. 175, 180, complete, 40&7½%
Goodell's Hack Saw Blades..... 40%
Griffin's Hack Saw Frames..35&5&10%
Griffin's Hack Saw Blades....35&5&10%
Springfield Mach. Screw Co.:
Diamond Hack Saw Blades..... 35%
Diamond Hack Saw Frames..... 50%
Star Hack Saws and Blades..... 15&10%
Sterling Hack Saw Blades....30&10&5%
Sterling Hack Saw Frames...30&10&10%
Sterling Power Hack Saw Machines, each, No. 1, $25.00; No. 2, $30.00..10%
Victor Hack Saw Blades..... 25%
Victor Hack Saw Frames..... 40%

Scroll—

Barnes' No. 7, $15..... 25%
Barnes' Scroll Saw Blades..... 40%
Barnes' Velocipede Power Scroll Saw, without boring attachment, $18; with boring attachment, $20..... 20%
Lester, complete, $10.00..... 15&10%
Rogers, complete, $4.00..... 15&10%

Sealers, Fish—

Covert's Saddlery Works..... 60&10%

Scales—

Family, Turnbull's ....60@50&10%
Counter:
Hatch, Platform, ½ oz. to ¼ lbs. ..... doz. $5.50
Two Platforms, ½ oz. to 8 lbs. ..... doz. $16.00
Union Platform, Plain $1.70@1.90
Union Platform, Stpd $1.85@2.15
Chatillon's:
Eureka 25%
Favorite 40%
Crocers' Trip Scales..... 50%
Chicago Scale Co.:
The "Little Detective"....25 lbs 50%
Union or Family No. 2..... 60%
Portable Platform (reduced list)..50%
Wagon or Stock (reduced list).25@35%
"The Standard" Portables..... 50%
"The Standard" R. R. and Wagon.50%

Scrapers—

Box, 1 Handle.....doz. $2.00@2.25
Box, 2 Handle.....doz. $2.60@2.85
Ship....Light, $2.00; Heavy, $4.50
Adjustable Box Scraper (S. R. & L. Co.), $6.00..... 45%
Chapin-Stephens Co., Box, 30@30&10&10%

Screens, Window and Frames—

Maine Screen Frames..... 40&10&5%
See also *Doors.*

Screws—Bench and Hand

Bench, Iron, doz., 1 in., $2.50@2.75; 1⅛, $3.00@3.25; 1¼..$3.50@3.75
Bench, W'd, Beech..doz. 30@30&5%
Hand, Wood.....30@30&5%
R. Bliss Mfg. Co., Hand....30@30&10%
Chapin-Stephens Co., Hand..30@30&10%
Ohio Tool Co., Bench and Hand..30%

Coach, Lag and Hand Rail—

Lag, Cone Point, list Oct. 1, '99 ..... 75&15%
Coach, Gimlet Point, list Oct. 1, '99 ..... 75&10%
Hand Rail, list Jan. 1, '81..... 70&10@75%

Jack Screws—

Standard List..... 80@80&5%
Millers Falls..... 50&10&10%
Millers Falls, Roller..... 50&10%
P., S. & W..... 50%
Sargent ..... 70&10%
Swett Iron Works..... 75&10@60&5%

Machine—

List Jan. 1, '98:
Flat or Round Head, Iron.... 50@50&10%
Flat or Round Head, Brass.... 50@50&10%

Set and Cap—

Set (Iron)..... 80%
Set (Steel), net advance over Iron 25%
Sq. Hd. Cap..... 75%
Hex. Hd. Cap..... 75%
Rd. Hd. Cap..... 60&10%
Fillister Hd. Cap.....60&10&10%

Wood—

List July 23, 1903.
Flat Head, Iron.....87½&10@..%
Round Head, Iron...85 &10@..%
Flat Head, Brass....85 &10@..%
Round Head, Brass..80 &10@..%
Flat Head, Bronze...77½&10@..%
Round Head, Bronze.75 &10@..%
Drive Screws.....87½&10%

Scroll Saws—
See *Saws, Scroll.*

Scythes— *Per doz.*
Grass, No. 1, Plain Finish...$6.25
Clipper, Bronzed Webb....$6.50
No. 3 Clipper, Pol'd Webb..$6.75
No. 6 Clipper & Solid Steel..$7.00
Bush, Weed & Bramble, No. 2..$6.50
Grain, No. 1.....$8.25
Bronzed Webb, No. 1.....$8.50
Nos. 3 & 4 Clipper, Grain...$8.75
Solid Steel No. 6.....$9.25

Seeders, Raisin—

Enterprise ..... 25@30%

Sets— Awl and Tool—

Aiken's Sets, Awl and Tools:
No. 20, ℔ doz., $10.00..... 60&10%
Fray's Adj. Tool Handles, Nos. 1, $12; 2, $18; 3, $12; 4, $9; 5, $7..... 50%
C. E. Jennings & Co.'s Model Tool Holders 30%
Millers Falls Adj. Tool Handles, No. 1, $12; No. 4, $12; No. 5, $18....15&10%

Garden Tool Sets—

Ft. Madison Three Plows, Hoe, Rake and Shovel..... ℔ doz sets $9.00

Sets, Nail—

Octagon ..... gro. $3.50@3.75
Buck Bros..... 27½%
Cannon's Diamond Point, ℔ gro.$12.40%
Mayhew's ..... ℔ gro. $9.00
Snell's Cor'gated, Cup Pt...℔ gro. $7.20
Snell's Knurled, Cup Pt....℔ gro. $7.20
Springfield Mach. Screw Co.:
Diamond Knurled Cup Pt. ℔ gro. $7.50

Rivet—

Regular list..... 75@75&10%

Saw—

Aiken's:
Genuine ..... 50&10%
Imitation ..... 50&10%
Atkin's:
Criterion 40%
Adjustable 40%
Bemis & Call Co.'s:
Cross Cut..... 30%
Plate 20%
Disston's Star and Monarch..... 25%
Morrill's No. 1, $15.00..... 50%
Nos. 3 and 4, Cross Cut, $20.00...50%
No. 5, Mill, $30.00..... 50%
Nos. 10, 11, 95, $15.60..... 50%
No. 1 Old Style, $10.00..... 50%
Special, $16.25..... 50%
Giant Royal Cross Cut.....℔ doz. $8.00
Royal, Hand..... ℔ doz. $4.50
Taintor Positive..... ℔ doz. $6.75

Shaving

Fox Shaving Sets, No. 30..... ℔ doz., net, $24.00
Smith & Hemenway Co.'s..... 60%

Sharpeners, Knife—

Chicago Wheel & Mfg. Co..... 75%
Pike Mfg. Co.:
Fast Cut Pocket Knife Hones, ℔ doz..... $1.50
Mounted Kitchen Sand Stone, ℔ doz..... $1.50
Natural Grit Carving Knife Hones, ℔ doz..... $3.00
Quick Cut Emery Carving Knife Hones, ℔ doz..... $1.50
Quick Edge Pocket Knife Hones, ℔ doz..... $2.50
} 33⅓%

Skate—

Smith & Hemenway Co..... 20%

Shaves, Spoke—

Iron .....doz. $1.10@1.25
Wood .....doz. $1.75@2.25
Bailey's (Stanley R. & L. Co.)..... 45%
Razor Edge (Stanley R. & L. Co.)..35%
Chapin-Stephens Co..... 30@30&10&10%
Goodell's, ℔ doz. $9.00..... 15&10%
Wood's F1 and F2..... 50%

Shears—

Cast Iron..	*7*	*8*	*9 in.*
Best	*$16.00*	*18.00*	*20.00 gro.*
Good ...	*$13.00*	*15.00*	*17.00 gro.*
Cheap ..	*$5.00*	*6.00*	*7.00 gro.*

Straight Trimmers, &c.:
Best quality Jap....70@70&10%
Best quality, Nickel..60@60&10%
Fair quality, Jap....80@80&5%
Fair quality, Nickel..75@75&10%
Tailors' Shears.....40@40&10%
Acme Cast Shears..... 40@40&5%
Heinisch's Tailor's Shears..... 10%
Wilkinson's Sheep, 1900 list, 30&10&5%; Grass, 50&10%; Horse or Mule, 50&10%

Tinners' Snips—

Steel Blades.....20&5@20&10%
Steel Laid Blades.....40&10@50%
Forged Handles, Steel Blades, Berlin, 50@50&5%
Heinisch's Snips..... 40%
Jennings & Griffin Mfg. Co.'s, 6¼ to 10 in..... 50%
Niagara Snips..... 40%
P., S. & W. Forged Handles..... 20%

Pruning Shears—

Cronk's Hand Shears..... 33⅓%
Cronk's Wood Handle Shears....33⅓%
Disston's Combined Pruning Hook and Saw, ℔ doz. $18.00..... 25%
Disston's Pruning Hook, ℔ doz. $12.00 ..... 25%
John T. Henry Mfg. Co.:
Pruning Shears, all grades....50&10%
P., S. & W. Co..... 33⅓%
Wilkinson's Hedge, Wilcut Brand, 60&10%
Wilkinson's Lawn and Border, Wilcut Brand..... 60&10%

Sheaves—Sliding Door—

Stowell's Anti-Friction..... 50%
Patent Roller, Hatfield's, Sargent's list ..... 70&10%
Reading 40%
R. & E. list..... 33⅓%
Wrightsville Hatfield Pattern..... 80%

Sliding Shutter—

Reading list..... 40%
R. & E. list..... 33⅓%
Sargent's list..... 10&10%

Shells—Shells, Empty—

Brass Shells, Empty:
Climax, Club, Rival, 10 and 12 gauge 5%
Paper Shells, Empty:
Acme, Ideal, Leader, New Rapid, Magic, 10, 12, 16 and 20 gauge..25&5%
Blue Rival, New Climax, Challenge, Monarch, Defiance, Repeater, Yellow Rival, 10, 12, 16 and 20 gauge 20%
Climax, Union, League, New Rival, 10 and 12 gauge..... 25%
Climax, Union, League, New Rival, 14, 16 and 20 gauge..... 20%
Expert, Metal Lined and Pigeon, 10 12, 16 and 20 gauge..... 33⅓
Robin Hood, Low Brass..... 20&5%
Robin Hood, High Brass..... 30&5%

Shells, Loaded—

Loaded with Black Powder..40%
Loaded with Smokeless Powder, medium grade..... 40&5%
Loaded with Smokeless Powder, high grade..... 40&10&10%
Robin Hood Smokeless Powder:
Robin Hood, Low Brass..... 50%
Comets, High Brass..... 50&10&5%

Shoes, Horse, Mule, &c.—

F.o.b. Pittsburgh:
Iron .....per keg $4.00
Steel .....per keg $3.75
Burden's, all sizes..... ℔ keg $3.90

Shot—

Drop, up to B, 25-lb. bag....$1.80
Drop, B and larger ..... per 25-lb. bag, $2.05
Buck, 25-lb. bag.....$2.05
Chilled, 25-lb. bag.....$2.05

Shovels and Spades—

Association List, Nov. 15, 1902..40%

Snow Shovels—

Long Handle.....$2.75@$3.00
Wood and Mall. D. Handle. $3.25@$3.50

Sieves and Sifters—

Hunter's Imitation..... gro. $9.50@10.00
Hunter's Genuine..... per gro. $12.00@12.50
Buffalo Metallic Blued, R. M. Co., ℔ gr.

14&16	16&18	18&20
$13.20	$13.50	$14.40

Shaker (Barler's Pat.) Flour Sifters, ℔ doz., $2.00..... 20%

Sieves, Seamless Metallic

Per dozen.—				
Mesh 14	*16*	*18*	*20*
Iron Wire....$1.05	*1.05*	*1.10*	*1.20*
Tinned Wire..$1.15	*1.15*	*1.20*	*1.30*

Sieves, Wooden Rim—

Nested, 10, 11 and 12 Inch.
Mesh 18, Nested....doz. $0.90@0.95
Mesh 20, Nested....doz. $1.00@1.05
Mesh 24, Nested....doz. $1.30@1.40

Sinks, Cast Iron—

Painted, Standard list:
12 x 18 to 22 x 36 in....60&5%
20 x 40 to 24 x 50 in..... 55%
24 x 60 to 24 x 120 in..... 35%
Barnes' low list:
Up to and including 20 x 36 in....60%
20 x 40 to 24 x 50 in..... 55%
NOTE.—There is not entire uniformity in lists used by jobbers.

Skeins, Wagon—

Cast Iron..... 80@80&10%
Steel ..... 40@40&10%

Slates, School—

Factory Shipments.
"D" Slates.....50@50&10%
Eureka, Unexcelled Noiseless.. 60&5 tens
Victor A, Noiseless.60&5 tens &5%

Slaw Cutters—See *Cutters.*

Snaps, Harness—

German .....40@40&10%
Covert Mfg. Co.:
Derby ..... 30&2%
High Grade..... 45%
Jockey 35%
Trojan 45%
Yankee ..... 30&2%
Yankee Roller..... 30&2%
Covert's Saddlery Works:
Crown 60%
German 60%
Model 60%
Triumph 60%
Oneida Community:
Harness Snaps, 1 inch..... 60&5%
Swivel Snaps..... 60%
Swivels 50%
Sargent's Patent Guarded....66⅔&10%

Snaths—

Scythe 50%

Snips, Tinners—See *Shears.*

Spoons and Forks—

Silver Plated—

Good Quality.....50&10@60&5%
Cheap .....60@60&10%
International Silver Co.:
1847 Rogers Bros. and Rogers & Hamilton ..... 40&10%
Rogers & Bro., William Rogers' Eagle Brand..... 50&10%
Anchor, Rogers Brand..... 60%
Wm. Rogers & Son..... 60&10%

Miscellaneous—

German Silver..... 60@60&5%
Cattaraugus Cutlery Co.:
Seneca Silver..... 50%

Tinned Iron—

Teas .....per gro. 45@50¢
Tables.....per gro. $0.50@$1.00

Springs— Door—

Chicago (Coil)..... 40&10%
Gem (Coil)..... 20%
Pullman (Coil)..... 25%
Reliance (Coil)..... 40&10%
Star (Coil)..... 30%
Torrey's Rod, 39 in..... ℔ doz. $1.10
Victor (Coil)..... 50&10&10%

Carriage, Wagon, &c.—

1¼ in. and Wider:	*Per lb.*
Black	*4@4¼¢*
Half Bright	*4@4¼¢*
Bright	*4½@4¾¢*

Painted Seat Springs:
1¼ x 2 x 26.....per pr. 42¢
1½ x 3 x 28.....per pr. 70¢

Sprinklers, Lawn—

Enterprise ..... 25@30%
Philadelphia No. 1, ℔ doz. $12; No. 2, $15; No. 3, $24..... 30%
Pleuger & Henger Mfg. Co.:
Cactus 70%
Japanese 75%
Nationals 65%

Squares—

Nickel plated..} List Jan. 5, 1900.
Steel and Iron..} 75&10@75&10&5%
Rosewood Hdl. Try Square and T-Bevels .....60&10&10@70%
Iron Hdl. Try Squares and T-Bevels .....50&10@40&10&10%
Disston's Try Sq. and T-Bevels....70%
Winterbottom's Try and Miter, No. 1, 40%; No. 2..... 50%

Squeezers, Lemon

Wood, Common, grd., No. 0, $5.25@$5.50; No. 1, $6.25@$6.50.
Wood, Porcelain Lined:
Cheap .....doz. $1.00
Good Grade.....doz. $1.25
Tinned Iron.....doz. $0.75@1.25
Iron, Porcelain Lined...doz. $1.75

Staples—

Barbed Blind.....lb. 6@6½¢
Electricians', Association list.. 80&10&10&10%
Fence Staples, Plain, $2.25; Galvanized $2.55
Poultry Netting Staples..... per lb. 3¼@3½¢
Grand Crossing Tack Co.'s list..80&10%

Steels, Butchers'—

Dick's 30%
Foster Bros.' 30%
C. & A. Hoffmann's..... 40%

Steelyards — ....30@30&10%

Stocks and Dies—

Blacksmiths' .....50@50&10%
Curtis Rev'ble Ratchet Die Stock..25%
Derby Screw Plates..... 25%
Green River..... 25%
Lightning Screw Plate..... 25%
Little Giant..... 25%
Reece's New Screw Plates..... 25%

Stoners, Cherry—

Enterprise ..... 25@30%

Stones—Oil, &c.

Chicago Wheel & Mfg. Co., 1904 list:
Gem Corundum Oil, Double Grit.60%
Gem Corundum Axe, Single or Double Grit..... 60%
Gem Corundum Slips..... 60%
Gem Corundum Razor Hones....50%
Pike Mfg. Co., 1904 list: ℔ lb.
Arkansas St. No. 1, 3 to 5½ in.$2.80
Arkansas St. No. 1, 5½ to 8 in.$3.50
Arkansas Slips No. 1..... $4.00
Lily White Washita, 4 to 8 in.60¢
Rosy Red Washita, 4 to 8 in..60¢
Washita St., Extra, 4 to 8 in.50¢
Washita St., No. 1, 4 to 8 in.40¢
Washita St., No. 2, 4 to 8 in.30¢
Lily White Slips..... 90¢
Rosy Red Slips..... 90¢
Washita Slips, Extra..... 80¢
Washita Slips, No. 1..... 70¢
Washita Slips, No. 2..... 40¢
} 33⅓%
India Oil Stones (entire list)....33⅓%
Quickcut Emery and Corundum Oil Stone, Double Grit..... 33⅓%
Quickcut Emery and Corundum Axe Stone, Double Grit..... 33⅓%

Quickcut Emery Rubbing Bricks 33⅓%
Hindostan No. 1, 8"g'lar, ₩ lb 8¢
Hindostan No. 1, Small, ₩ lb 10¢
Axe Stones (all kinds)
Turkey Oil Stones, Extra, 5 to 8 in. ₩ lb 60¢ } 33⅓%
Queer Creek Stones, 4 to 8 in. 20¢
Queer Creek Slips 40¢
Sand Stone 6¢

Scythe Stones—

Chicago Wheel & Mfg. Co.:
Gem Corundum, 10 in., gro. $8.00 ₩ gro., 12 in., $10.80.
Norton Emery Scythe Stones:
Less than gross lots ₩ gro. $9.00
One gross or more ₩ gro. $7.20
Lots of 10 gross or more ₩ gro. $6.00
Pike Mfg. Co., 1901 list:
Black Diamond S. S. ₩ gro. $12.00
Lamoille S. S. ₩ gro. $11.00
White Mountain S. S. ₩ gro. $9.00
Green Mountain S. S. ₩ gro. $6.00
Extra Indian Pond S.S. ₩ gro. $7.50
No. 1 Indian Pond S.S. ₩ gro. $7.00
No. 2 Indian Pond S.S. ₩ gro. $4.50
Leader Red End S. S. ₩ gro. $4.50
Quick Cut Emery ₩ gro. $10.00
Pure Corundum ₩ gro. $18.00
Crescent $7.00
Emery Scythe Rifles, 2 Coat, $8
Emery Scythe Rifles, 3 Coat, $10
Emery Scythe Rifles, 4 Coat, $12
Balance of 1904 list 33⅓% } 25&10%

Stoppers, Bottle—

Victor Bottle Stoppers ₩ gro. $9.00

Stops— Bench—

Millers Falls 15&10%
Morrill's, ₩ doz., No. 1, $10.00 50%
Morrill's, No. 2, $12.50 50%

Door—

Chapin-Stephens Co. 60@60&10%

Plane—

Chapin-Stephens Co. 20%

Straps— Box—

Cary's Universal, case lots 25&20%

Hame—

Covert's Saddlery Works 60&10%

Stretchers, Carpet—

Cast Iron, Steel Points, dos. 60@60&10%
Sockct dos. $1.60
Bullard, ₩ doz. $1.00
Excelsior Stretcher and Tack Hammer Combined, ₩ doz. $6.00 20%

Strops, Razor—

Star Diagonal Strop 25%

Stuffers, Sausage—

Enterprise Mfg. Co. 25@25&7½%
National Specialty Co., list Jan. 1, 1902 30&5%

Sweepers, Carpet—

National Sweeper Co.: ₩ doz.
Louis XV, Roller Bearing, Gold Plated $120.00
Hepplewhite, Roller Bearing, Silver Plated $72.00
Sheraton, Roller Bearing, N'kel. $60.00
Ye Mission, Roller Bearing, Oxidized Coppered $36.00
Transparent, Roller Bearing, Plate Glass top, Nickeled $36.00
National Queen, Roller Bearing, Fancy Veneers $27.00
Loyal, Roller Bearing, Veneers, Nickeled $25.00
Triple Medal, Roller Bearing, Nickeled $24.00
Marion, Roller Bearing N'kel. $24.00
Marion Queen, Roller Bearing, Nickeled $21.00
Monarch, Roller Bearing, N'kel. $22.00
Monarch, Roller Bearing, Jap. $20.00
Perpetual, Regulsy B'r'gs, N'kel. $20.00
Perpetual, Regular B'r'gs, Jap. $18.00
Monarch Extra (17 in. case), Roller Bearing, Nickeled $36.00
Monarch Extra (17 in. case), Roller Bearing, Japanned $33.00
Auditorium (26 in. case), Roller Bearing, Nickeled $54.00
Mammoth (30 in. case), Roller Bearing, Nickeled $60.00

NOTE.—Rebates: 50c per dozen on three-dozen lots; $1 per dozen on five-dozen lots; $3 per dozen on ten-dozen lots; $4.50 per dozen on twenty-five-dozen lots.

Streator Metal Stamping Co.:
Model E, Sanitaire ₩ doz $25.00
Model A, Sterling ₩ doz. $25.00
Model B, Sterling, Nickeled ₩ doz. $23.00
Model B, Sterling, Japanned ₩ doz. $21.00
Model C, Sterling ₩ doz. $21.50
Model D, Sterling ₩ doz. $19.50

Tacks, Finishing Nails, &c.

New List, May 1, 1905.

American Carpet Tacks 90@37½&10%
American Cut Tacks 90@37½&10%
Swedes Cut Tacks 90@37½&10%
Swedes Upholsterers' 90&50&10%
Gimp Tacks 90&50&10%
Lace Tacks 90&50&10%
Trimmers' Tacks 90&40&10%
Looking Glass Tacks 65&5%
Bill Posters' and Railroad Tacks, 90&50&10%
Hungarian Nails 85%
Finishing Nails 70&10%
Trunk and Clout Nails 80&10%

NOTE.—The above prices are for Standard Weights. An extra 5% is given on Medium Weights, and an extra 10&5% is given on light weights.

Miscellaneous—

Double Pointed Tacks 90&5 or 6 tens
Steel Wire Brads, R. & E. Mfg. Co.'s list 50&10@60%
See also Nails, Wire.

Tanks, Oil— Each.

Emerald, R. M. Co. 30-gal. $3.40
Emerald, R. M. Co. 60-gal. $4.25
Queen City, R. M. Co. 30-gal. $3.65
Queen City, R. M. Co. 60-gal. $4.50

Tapes, Measuring—

American Asses' Skin 50@—%
Patent Leather 25@30&5%
Steel 33⅓&5%
Chesterman's 25@25&5%
Eddy Asses' Skin 40&10@50%
Eddy Patent Leather 25@30&5%
Eddy Steel 40@40&10%
Keuffel & Esser Co.:
Favorite, Ass Skin 40&10@50%
Favorite, Duck and Leather 25&5@25&10%
Metallic and Steel, lower list 35@35&5%
Pocket 35@35&5%
Lufkin's:
Asses' Skin 40&10@50%
Metallic 30@30&5%
Patent Bend, Leather 25&5@25&10%
Pocket 40@40&5%
Steel 33⅓@35%

Teeth, Harrow—

Steel Harrow Teeth, plain or headed, ⅝-inch and larger per 100 lbs. $2.75@$3.00

Thermometers—

Tin Case 80&10@80&10&5%

Ties, Bale—Steel Wire—

Single Loop 80&2½%
Monitor, Cross Head, &c. 70%

Brick Ties—

Niagara Brick Ties 25&10%

Tinners' Shears, &c.—

See *Shears, Tinners', &c.*

Tinware—

Stamped, Japanned and Pieced, sold very generally at net prices.

Tips, Safety Pole—

Covert's Saddlery Works 60&10%

Tire Benders, Upsetters, &c.

See *Benders and Upsetters, Tire.*

Tools—Coopers'—

L. & I. J. White 20@20&5%

Hay—

Myers' Hay Tools 50%
Stowell's Hay Carriers 50%
Stowell's Hay Forks 50%
Stowell's Fork Pulleys 50%

Miniature—

Smith & Hemenway Co.'s 25%

Saw—

Atkins' Cross Cut Saw Tools 40%
Simonds' Improved 33⅓%
Simonds' Crescent 25%

Ship—

L. & I. J. White 25%

Transom Lifters—

See *Lifters, Transom.*

Traps—Fly—

Balloon, Globe or Acme, dos. $1.15@$1.25; gro $11.50@12.00
Harper, Champion or Paragon, doz. $1.25@1.40; gro. $13.00@13.50

Game—

Imitation Oneida 75@75&5%
Newhouse 40@45&5%
Hawley & Norton 65%
Victor 70&10%
Oneida Community Jumper 50%

Mouse and Rat—

Mouse, Wood, Choker, doz. holes 8½@9¢
Mouse, Round or Square Wire, doz. 85@90¢
Marty French Rat and Mouse Traps (Genuine):
No. 1, Rat, each $1.21; ₩ doz. $13.25
No. 3, Rat, ₩ doz. $6.50; case of 50 $5.75 doz.
No. 3½, Rat, ₩ doz. $5.25; case of 72 ₩ gro. $4.70 doz.
No. 4, Mouse, ₩ doz. $3.65; case of 150 $3.00 doz.
No. 5, Mouse, ₩ doz. $3.00; case of 150 $2.25 doz.

Trimmers, Spoke—

Wood's E 1 50%

Trowels—

Disston Brick and Pointing 30%
Disston Plastering 25%
Disston "Standard Brand" and Garden Trowels 35%
Kohler's Steel Garden Trowels, 5 in. ₩ gro. $4.80
Kohler's Steel Garden Trowels, 6 in. ₩ gro. $6.00
Never-Break Steel Garden Trowels ₩ gro. $6.00
Rose Brick and Plastering 25&5%
Woodrough & McParlin, Plastering 25%

Trucks, Warehouse, &c.—

B. & L. Block Co.:
New York Pattern 50&10%
Western Pattern 60&10%
Handy Trucks ₩ doz. $16.00
Grocery ₩ doz. $15.00
Daisy Stove Trucks, Improved Pattern ₩ doz. $18.50
McKinney Trucks each $10.00
Model Stove Trucks ₩ doz. $18.50

Tubs, Wash—

	No. 1	2	3
Galvanized, per doz.	*$4.25*	*5.75*	*7.25*
Galvanized Wash Tubs (R. M. Co.):			
No.	1	2	3	10	20	30
Per doz., net	$5.70	6.30	7.20	6.60	7.20	8.10

Twine, Miscellaneous—

Flax Twine:	BC.	B.
No. 9, ¼ and ⅛-lb. Balls	*22@24¢*	
No. 12, ¼ and ⅛-lb. Balls	*18@20¢*	
No. 18, ¼ and ⅛-lb. Balls	*16@18¢*	
No. 24, ¼ and ⅛-lb. Balls	*16@18¢*	
No. 36, ¼ and ⅛-lb. Balls	*15@17¢*	
Chalk Line, Cotton Balls	*⅛-lb. 25@30¢*	
Cotton Mops, 6, 9, 12 and 15 lb. to doz	*10@18¢*	
Cotton Wrapping, 5 Balls to lb., acording to quality	*14½@20¢*	
American 2-Ply Hemp, ¼ and ⅛-lb. Balls	*13@14¢*	
American 3-Ply Hemp, 1-lb. Balls	*13@14¢*	
India 2-Ply Hemp, ¼ and ⅛-lb. Balls (Spring Twine)	*8½¢*	
India 3-Ply Hemp, 1-lb. Balls	*8½¢*	
India 3-Ply Hemp, 1½-lb. Balls	*7@8¢*	
2, 3, 4 and 5-Ply Jute, ⅛-lb. Balls	*9@10¢*	
Mason Line, Linen, ⅛-lb. Bls	*46¢*	
No. 20½ Mattress, ¼ and ⅛-lb. Balls	*37¢*	
Wool, 3 to 6 ply	*B 6¢*	*A 6½¢*

Vises—

Block 726
F. 7
Solid Box 60%

Parallel—

Athol Machine Co.:
Simpson's Adjustable 40%
Standard 40%
Amateur 25%
Columbian Hdw. Co. 40%
Emmert Universal:
Pattern Makers' No. 1, $15.00; No. 2, $12.50.
Machinist and Tool Makers' No. 4A, $12.50; No. 5A, $7.00; No. 6A, $10.00; No. 10A, $22.50.
Presto Quick Acting 25@25&5%
Tiger Machinists' 45%
Fisher & Norris Double Screw 15&10%
Hollands':
Machinists' 40@40&5%
Keystone 65&5@70%
Lewis Tool Co.:
Adjustable Jaw 30%
Monarch 50%
Solid Jaw 50%
Massey Vise Co.:
Clincher 40%
Perfect 20%
Lightning Grip 20%
Merrill's 20%
Millers Falls 60&10%
Parker's:
Victor 20@25%
Regulars 20@25%
Vulcan's 40@45%
Combination Pipe 55@60%
Prentiss 20@25%
Sargent's 40%
Snediker's X. L. 33⅓%
Stephens' 33⅓%
Williamson Mfg Co. Double Swivel 40&5%

Saw Filers—

Disston's D 3 Clamp and Guide, ₩ doz. $30 25%
Perfection Saw Clamps, ₩ doz. $4.50
Reading 60%
Wentworth's Rubber Jaw, Nos. 1, 2 and 3 45&50%

Wood Workers—

Massey Vise Co.:
Lightning Grip 15%
Perfect 15%
Wyman & Gordon's Quick Action, 6 in., $6.00; 9 in., $7.00; 14 in., $8.00.

Miscellaneous—

Bignall & Keeler Combination Pipe Vise 60&10%
Holland's Combination Pipe 60@60&5%
Massey's Quick Action Pipe 40%
Parker's Combination Pipe:
87 Series 60%
187 Series 60&5%
No. 870 40%
Williamson Mfg. Co. Double Swivel Combination Pipe 40&5%

Wads—*Price per M.*

B. E., 11 up	*60¢*
B. E., 9 and 10	*70¢*
B. E., 8	*80¢*
B. E., 7	*80¢*
P. E., 11 up	*$1.00*
P. E., 9 and 10	*1.25*
P. E., 8	*1.50*
P. E., 7	*1.50*

Dis. 15%

Ely's B. E., 11 and larger $1.70@1.75
Ely's P. E., 12 to 20 $3.00@3.25

Ware, Hollow—

Cast Iron, Hollow—

Stove Hollow Ware:
Enameled 55%
Ground 60%
Plain or Unground 65%
Country Hollow Ware, per 100 lbs. $2.75
White Enameled Ware:
Maslin Kettles 70%
Covered Wares
Tinned and Turned 40%
Enameled 50%
See also *Pots, Glue.*

Enameled—

Agate Nickel Steel Ware 60%
Iron Clad Ware 70&10%
Lava, Enameled 40&10%
Never Break Enameled 50%

Tea Kettles—

Galvanized Tea Kettles:

Inch	6	7	8	9
Each	*45¢*	*50¢*	*55¢*	*65¢*

Steel Hollow Ware—

Avery Spiders and Griddles 65@65&5%
Avery Kettles 60%
Porcelained 50&50&10%
Never Break Spiders and Griddles 65&5%
Never Break Kettles 60%
Solid Steel Spiders and Griddles 65&5%
Solid Steel Kettles 60%

Warmers, Foot—

Pike Mfg. Co., Soapstone 40@40&10%

Washboards—

Solid Zinc: ₩ doz.
Crescent, family size, bent frame $3.25
Red Star, family size, stationary protector $3.25
Double Zinc Surface:
Saginaw Globe, family size, stationary protector $2.90
Cable Cross, family size, stationary protector $3.15
Single Zinc Surface:
Naiad, family size, open back, perforated $2.65
Saginaw Globe, protector, family size, ventilated back $2.90
Brass Surface:
Brass King, Single Surface, open back $3.25
Nickel Plate Surface:
No. 1001 Nickel Plate, Single Surface $3.25
Glass Surface:
Glass King, Single Surface, open back $3.25
Enamel Surface:
Enamel King, Single Surface, ventilated back $3.25

Washers—Leather, Axle—

Solid 80&10@80&10&10%
Patent 90@90&5%
Coil: ¾ 1 1¼ 1½ Inch.
10¢ 11¢ 12¢ 13¢ per box

Iron or Steel—

Size bolt 5-16 ⅜ ½ ⅝ ¾
Washers $5.70 4.80 3.50 3.30 3.10
The above prices are based on 5.70¢ off list.
In lots less than one keg add ½¢ per lb.; 5-lb. boxes add ½¢ to list.

Cast Washers—

Over ½ inch, barrel lots per lb. 1¼@1¢

Weather Strip—

Flexible Felt—

Lined, per 100 ft., $2; $3; $4 40&10%
Moore's Unlined, per 100 ft., $2; $3; $4 50&10%

Wedges—

Oil Finish lb. 2.70@2.80¢

Weights—Hitching—

Covert Mfg. Co. 40%
Covert's Saddlery Works 60&10%

Sash—

Per ton, f.o.b. factory:
Eastern District $27.50@$28.00
Southern Territory $20.00@$23.00
Western and Central Districts $23.00@$25.00

Wheels, Wel—

8-in., $1.55; 10-in., $2.00; 12-in., $2.50; 14-in., $4.00.

Wire and Wire Goods—

Bright and Annealed:
6 to 9 80%
10 to 18 80&2½%
19 to 26 80&7½%
27 to 36 80&2½%
Galvanized:
6 to 9 75&5%
10 to 14 75&7½%
15 to 16 72½&10&2½%
19 to 26 75%
27 to 36 72½%
Coppered:
6 to 9 75&5%
10 to 14 75&7½%
15 to 18 72½&10&2½%
19 to 26 75&10&5%
27 to 36 75%
Tinned:
6 to 14 75&10&2½%
15 to 18 75&7½%
Annealed, Steel and Tinned, on Spools 70&10&10@70&10&10&10%
Brass and Copper on Spools 60&5@60&10&5%
Brass, list Feb. 26, '96 15%
Copper, list Feb. 26, '96 25%
Cast Steel Wire 50%
Wire Clothes Line, see Lines.
Wire Picture Cord, see Cord.

Bright Wire Goods—

List June 24, '03 90&25@30&30%
Brass Cup Hooks and Brass Screw Hooks 85&10%

Wire Cloth and Netting—

Galvanized Wire Netting 80&5@80&10%
Painted Screen Cloth, 100 ft., $1.10
Standard Galv. Hardware Grade:
Nos. 2, 2½ & 3 Mesh, sq. ft. 3 ¢
Nos. 4 and 5 Mesh, sq. ft. 3½¢
No. 6 Mesh, sq. ft. 3½¢
No. 8 Mesh, sq. ft. 4 ¢

Wire, Barb—See *Trade Report*

Wrenches—

Agricultural 75&10&5@80%
Alligator or Crocodile 70&10@75%
Baxter Pattern S Wrenches 70&5@70&10%
Drop Forged S 45@45&5%
Acme 60&10%
Alligator Pattern 70%
Bull Dog 70%
Bemis & Call's:
Adjustable S 40%
Adjustable S Pipe 40%
Bemis Pipe 60%
Briggs Pattern 40%
Combination Black 40&5%
Combination Bright 40%
Merrick Pattern 50%
Boardman's 40%
Coes' Genuine Knife Hdl. 40&10&5&5%
Coes' Genuine Steel Hdl. 40&10&5&5%
Coes' Genuine Key Model 40&10&5&5%
Coes', Genuine Hammer Handle 40&10&5&5%
Coes' "Mechanics'" 40&10&10&5&5%
Donohue's Engineer 40&10%
Eagle 50&10%
Elgin Wrenches, ₩ doz. $6.25
Elgin Rethreading Attachment, one die, ₩ doz. $6.25
Elgin Extra Dies, ₩ doz. $3.00
Elgin Extra Jaws, ₩ doz. $1.75
Elgin Monkey Wrench Pipe Jaws, ₩ doz. $2.10
Gem Pocket 70%
Hercules 70%
W. & B. Machinist:
Case lots 50&5%
Less than case lots 50%
Solid Handles, P., S. & W. 50&10@60
Stillson 65%
Vulcan Chain 50%

Fruit Jar—

Triumph Fruit Jar Wrench, 5 gross lots, ₩ gross, $7.50; ₩ doz. $0.80

Wringers—

Tuttle Roller Press Mop Pail Wringer, each, $8.00; ₩ doz. $48.00

Wrought Goods—

Staples, Hooks, &c., list March 17, '92 90@90&10%

Yokes, Neck—

Covert Saddlery Works, Trimmed 70%
Covert Saddlery Works, Neck Yoke Centers 70%

Yokes, Ox, and Ox Bows—

Fort Madison's Farmers' & Freighters' list net

Zinc—

Sheet per 100 lbs., $8.00@8.25

For the Table of "Current Metal Prices" see the First Issue of Every Month.

LB O 06